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Chapter IV describes the interim findings of an experimental program for underachieving high school graduates during their freshman year at Southern Illinois University. The statistically analyzed data are presented and discussed under four headings--(1) Subjects' occupation or whereabouts in the year following their participation in the program, (2) retention of subjects during the freshman year and during their sophomore year when they were enrolled in the regular university curriculum, (3) quality of subjects' academic performance, and of subjects' performance. Appendixes contain cumulative grade point average data, term grade point average data, and other relevant information. (For other chapters of this report, see UD 005309, UD 005310, UD 006858, UD 006859, and UD 006860) (LB)

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Southern Illinois University
A TWO-YEAR REPORT ON THE
EXPERIMENTAL FRESHMAN YEAR PROGRAM

CHAPTER IV

RESULTS

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SOUTHERN ILLINOIS UNIVERSITY
Experimental Freshman Year Program
October 10, 1964

CHAPTER IV

RESULTS

The four major sections in this chapter are titled Second Year Occupations, Retention, Quality of Academic Performance, and Prediction of Academic Performance. In each of the four sections there are a number of sub-sections which deal with specific criterion measures and data categories. The usual format in the sub-sections presents an introduction which includes the question to be answered by the data analysis, the analysis applied to the data, and the results of the analysis.

An appendix included at the end of this chapter contains a complete listing and description of the EFY Program data which have been collected and are available.

Introduction

To determine whether the objectives of the Experimental Freshman Year Program were achieved, i.e., (1) whether high school low achievers benefited from special treatment received in their freshman year and (2) whether high school low achievers capable of succeeding in college had been identified, a number of criterion measures were specified. These criterion

measures were chosen on the basis of their pertinence to the variables under consideration for the EFY projects and, of course, on the basis of their availability for analysis. The criterion measures which were selected, analyzed, and reported in this chapter are:

1. The occupations the subjects engaged in during the year following the treatment year.
2. The number of subjects who remained in school during the two-year program.
3. The subjects' grade point averages considered in various ways, such as, term-by-term or cumulatively for a two-year period.
4. The scores on the General Culture Test battery which was administered to the subjects in their second year.
5. The predictive values of ACT scores, of interview ratings, and of first term GPA.

Statistical tests were used to analyze most of the data collected for this two-year report. Generally, statistically significant findings at the .05 level of confidence, or greater, are reported.

Qualifications. It is important that the reader become aware of some of the known conditions which may have some impact on the findings reported here. First, the reader should recall that the subjects in Group IV had significantly lower initial ACT scores than did the subjects in other groups. This difference was not adjusted in the retention analysis. However, by the end of the second quarter there were no significant differences on ACT scores among subjects remaining in Groups I, II, III, and IV. From the end of the first quarter through the end of the fourth quarter, the ACT scores for Groups V and VI were significantly higher than those for some of the other groups. Second, it is important to point out that the subjects in Groups IV, V, and VI had to meet different academic performance standards to remain

in school during the first three successive quarters than did the students in Groups I, II, and III. The students in Groups I, II, and III were assured they would not be dismissed for academic reasons during their first three quarters in college. However, the students in Groups IV, V, and VI were subject to the regular university scholastic probation status regulation which states:

A freshman or sophomore goes on scholastic probation at the end of the quarter in which his over-all grade points fall below the "C" average by more than fifteen points. He is restored to good standing when his over-all grade points rise again to within fifteen points of a "C" average. A freshman or sophomore on scholastic probation who does not make a "C" average for a given quarter will be dropped from his academic unit. At that time he will be referred to the Student Affairs Office for counsel concerning future academic possibilities.

A third condition is that Group IV Low subjects started school in the Winter Quarter, 1963, while all other groups began in the Fall Quarter, 1962. This difference in starting time meant that the summer vacation occurred between the second and third quarters for Group IV Low's and between the third and fourth quarters for the other groups. A further result of their starting a quarter later than the other subgroups was that Group IV Low's had the opportunity to spend only five quarters in school, excluding the Summer Quarter, prior to the time the analysis was conducted. All other subgroups had the opportunity to spend six quarters in school, also excluding Summer Quarter, prior to the time the data analysis was conducted for this report.

Fourth, it is important for the reader to remember that a time lapse of only one year after the treatment year is probably too soon to look for stable effects in occupations, retention rates, or grade point averages.

Second Year Occupations

The data presented here answer the question, "In what occupations were the EFY students engaged during the 1963-64 school year?" It is important to note that second-year occupational data are available for the subjects in Groups I, II, III, and IV only.

During the spring of 1964, a questionnaire was sent to the 200 EFY subjects in Groups I, II, III, and IV who had completed their first year at Southern Illinois University in 1962-63. This questionnaire was designed to obtain information on the subjects' occupations during the year following their first year at Southern Illinois University. The subjects' occupations as specified on their returned questionnaires were classified into one of four occupational categories. The four categories are: (1) attending Southern Illinois University, (2) attending another school, (3) working, and (4) serving in the military. In addition to these four occupational categories, two more categories were specified. One of the other categories which is designated as "other" includes persons not involved in any of the previous four categories. The remaining category, designated "unknown," is used to report individuals for whom information was not available.

The occupations of the EFY subjects in 1963-64 were reported on the returned questionnaires on a month-by-month basis, from September, 1963, through May, 1964. These monthly occupational responses were (1) classified into one or more of the occupational categories specified above and (2) classified in respect to EFY group and ACT High/Low subgroup categories. Then, the average number of persons in each group engaged in each occupation during the nine-month period was computed. The other treatment of

these data consisted of computing the percentage of individuals in each of the occupational categories for each group and subgroup.

These data are reported in Tables 4.1 through 4.5. It should be noted that these data are descriptive in nature and that statistically analyzed data dealing with retention are reported later in this chapter. The occupational data were not statistically analyzed by the chi-square test because of the low number of subjects in many categories.

The following general observations are offered relative to second year occupational data reported in Tables 4.1 through 4.5.

1. Most of the subjects were accounted for in the questionnaire survey. Less than five per cent were unaccounted for (Table 4.1).
2. Most of the subjects remained at Southern Illinois University during their second year (Table 4.1).
3. A few subjects attended schools other than Southern Illinois University in 1963-64 (Table 4.1).
4. The second largest occupational grouping for all EFY subjects was that of "working" (Table 4.1).

Retention

The data presented in this section of the results chapter deal with student retention and present the number and per cent of students who were enrolled in Southern Illinois University during the 1962-63 school year, when the students experienced the experimental and control programs, and during the 1963-64 school year, when the students were enrolled in the regular University program. This section has three parts. The first deals with quarter-by-quarter retention data; the second presents two-year retention data; and the third covers second year retention data.

TABLE 4.1

1963-64 OCCUPATIONS OF EFY SUBJECTS IN GROUPS
I, II, III, AND IV COMPLETING THREE
CONSECUTIVE QUARTERS AT SIU IN 1962-63

Occupations	Monthly Average September Through May	
	No.	%
Attending SIU	132	65
Attending Other Schools	14	7
Working	34	17
Military	7	4
Other	4	2
Unknown	9	5
Total	200	100

TABLE 4.2

1963-64 OCCUPATIONS OF EFY SUBJECTS IN GROUPS I, II, III, AND IV
 COMPLETING THREE CONSECUTIVE QUARTERS AT SIU
 IN 1962-63 CLASSIFIED BY ACT SCORES

Occupations	Monthly Average September Through May				Total
	ACT 20+		ACT 19--		
	No.	%	No.	%	
Attending SIU	57	71	75	63	132
Attending Other Schools	7	3	7	5	14
Working	9	11	25	21	34
Military	2	3	5	4	7
Other	1	1	3	3	4
Unknown	4	5	5	4	9
Total	80	100	120	100	200

TABLE 4.3

1963-64 OCCUPATIONS OF EFY SUBJECTS COMPLETING THREE CONSECUTIVE
 QUARTERS AT SIU IN 1962-63 CLASSIFIED BY EFY GROUPS

Occupations	Monthly Average September Through May								Total
	Group I		Group II		Group III		Group IV		
	No.	%	No.	%	No.	%	No.	%	
Attending SIU	39	76	38	60	36	58	19	79	132
Attending Other Schools	3	4	3	5	6	10	2	10	14
Working	8	16	13	20	13	21	0	0	34
Military	0	0	5	8	1	2	1	3	7
Other	1	2	1	2	2	3	0	0	4
Unknown	1	2	2	3	4	6	2	8	9
Total	52	100	62	100	62	100	24	100	200

TABLE 4.4

1963-64 OCCUPATIONS OF EFY SUBJECTS COMPLETING THREE CONSECUTIVE
 QUARTERS AT SIU IN 1962-63 WITH ACT SCORES OF 20
 AND ABOVE CLASSIFIED BY EFY GROUPS

Occupations	Monthly Average September Through May								Total
	Group I 20+		Group II 20+		Group III 20+		Group IV 20+		
	No.	%	No.	%	No.	%	No.	%	
Attending SIU	15	32	19	70	16	67	7	64	57
Attending Other Schools	1	6	1	4	3	13	2	18	7
Working	1	6	4	15	4	17	0	0	9
Military	0	0	2	7	0	0	0	0	2
Other	1	6	0	0	0	0	0	0	1
Unknown	0	0	1	4	1	3	2	18	4
Total	18	100	27	100	24	100	11	100	80

TABLE 4.5

1963-64 OCCUPATIONS OF EFY SUBJECTS COMPLETING THREE CONSECUTIVE
 QUARTERS AT SIU IN 1962-63 WITH ACT SCORES OF 19
 AND BELOW CLASSIFIED BY EFY GROUPS

Occupations	Monthly Average September Through May								Total
	Group I 19-		Group II 19-		Group III 19-		Group IV 19-		
	No.	%	No.	%	No.	%	No.	%	
Attending SIU	24	71	19	53	20	51	12	92	75
Attending Other Schools	2	6	2	5	3	8	0	0	7
Working	7	21	9	24	9	23	0	0	25
Military	0	0	3	11	1	3	1	8	5
Other	0	0	1	3	2	5	0	0	3
Unknown	1	2	1	4	3	10	0	0	5
Total	34	100	35	100	38	100	13	100	120

In each of the three sections there are two major sub-categories. One of the sub-categories contains data relative to subjects who remained at Southern Illinois University in their second year. This category is designated as "At SIU." The second sub-category contains not only the data relative to subjects who remained at Southern Illinois University in their second year, but also the data for subjects who attended other schools, any post high school institution, in their second year. This latter category is designated as "All Schools."

The first two tables in this section report the numbers of subjects remaining in school during each quarter of the two-year period. The data in these two tables, Table 4.6 and 4.7, are relative to all three subsections in this retention section. The reader should note that Table 4.6, which contains data relative to students "At SIU," includes data for all EFY groups--Groups I, II, III, IV, V, and VI. However, Table 4.7, which contains data relative to students at "All Schools," includes data for Groups I, II, III, and IV only, since data relative to this matter were not obtained for the subjects in Groups V and VI.

Quarter-by-Quarter Retention

This section answers the question, "Is there a significant difference among EFY groups or subgroups with regard to the number of subjects completing each quarter when compared with the number completing the previous quarter?"

At SIU. Table 4.8 shows the percentages of subjects remaining at Southern Illinois University each subsequent quarter, the percentage being based on the number of subjects having completed the previous quarter. The chi-square test was used to analyze the data considered in this section.

TABLE 4.7

NUMBERS OF EFY STUDENTS REMAINING
IN SCHOOL EACH QUARTER

EFY Groups and ACT Classification	Number of EFY Students					
	Expected to Start	Started 1st Qtr.	Completed 1st Qtr.	Completed 2nd Qtr.	Completed 3rd Qtr.	Completed 4 Qtrs. 5 Qtrs. 6 Qtrs.
EFY Totals	368	275	265	234	200	170 140 *
ACT 20÷	184	105	100	89	80	71 64 53
ACT 19-	204	170	165	145	120	99 76 *
Classified by ACT						
Classified by EFY Groups						
Group I	95	66	63	59	52	48 40 32
Group II	97	74	71	66	62	53 41 33
Group III	96	80	76	70	62	49 41 34
Group IV	100	55	55	39	24	20 18 *
Classified by EFY Group and ACT						
Group I ACT 20÷	43	22	21	21	13	17 16 12
ACT 19-	52	44	42	38	34	31 24 20
Group II ACT 20÷	46	30	29	27	27	25 21 16
ACT 19-	51	44	42	39	35	28 20 17
Group III ACT 20÷	45	32	29	26	24	21 19 17
ACT 19-	51	48	47	44	38	28 22 17
Group IV ACT 20÷	50	21	21	15	11	8 8 8
ACT 19-	50	34	34	24	13	12 10 *

* The data for Group IV Low's (below 19 on composite ACT score) were not complete for sixth quarter and therefore are not reported in these data.

TABLE 4.8

PERCENTAGES OF EFY STUDENTS REMAINING IN SIU EACH QUARTER OF STUDENTS COMPLETING PREVIOUS QUARTER

EFY Groups and ACT Classification	Percentages of Students					
	Started 1st Qtr.	Completed 1st Qtr. of Str'd 1st Qtr.	Completed 2nd Qtr. of Compl. 2nd Qtr.	Completed 3rd Qtr. of Compl. 3rd Qtr.	Completed 4th Qtr. of Compl. 4th Qtr.	Completed 5th Qtr. of Compl. 5th Qtr.
EFY Totals	100%	96.4%	88.3%	85.5%	77.0%	81.2%
Norm Totals (V & VI)	100%	97.5%	89.2%	92.5%	74.5%	91.2%
Classified by ACT						
EFY ACT 20+	100%	95.2%	89.0%	89.9%	80.0%	90.6%
EFY ACT 19-	100%	97.1%	87.9%	82.8%	75.0%	74.4%
Norm ACT 20+	100%	100%	92.0%	94.7%	80.5%	97.1%
Norm ACT 19-	100%	95.0%	86.3%	90.2%	67.6%	92.0%
Classified by EFY Group						
Group I	100%	95.5%	93.7%	88.1%	88.5%	82.6%
Group II	100%	95.9%	93.0%	93.9%	75.8%	76.6%
Group III	100%	95.0%	92.1%	88.6%	67.7%	81.0%
Group IV	100%	100%	70.9%	61.5%	79.2%	89.5%
Group V	100%	96.0%	81.3%	94.0%	69.2%	90.7%
Group VI	100%	99.0%	83.8%	91.2%	79.5%	98.5%
Classified by EFY Group and ACT						
Group I ACT 20+	100%	95.5%	100%	85.7%	88.9%	100%
Group I ACT 19-	100%	95.5%	90.5%	89.5%	88.2%	73.3%
Group II ACT 20+	100%	96.7%	93.1%	100%	85.2%	82.6%
Group II ACT 19-	100%	95.5%	92.9%	89.7%	68.6%	70.8%
Group III ACT 20+	100%	90.6%	89.7%	92.3%	75.0%	88.9%
Group III ACT 19-	100%	97.9%	93.6%	86.4%	63.2%	75.0%
Group IV ACT 20+	100%	100%	71.4%	73.3%	63.6%	100%
Group IV ACT 19-	100%	100%	70.6%	54.2%	92.3%	83.3%
Group V ACT 20+	100%	100%	86.0%	97.7%	81.0%	94.2%
Group V ACT 19-	100%	92.0%	87.0%	90.0%	55.6%	85.0%
Group VI ACT 20+	100%	100%	98.0%	91.8%	80.0%	100%
Group VI ACT 19-	100%	98.0%	85.7%	90.5%	78.9%	96.7%

* The data for Group IV Low's (below 19 on composite ACT score) were not complete for the sixth quarter and therefore are not reported in these data.

Two significant differences were found. Group IV had significantly lower retention than Groups V and VI on the number of subjects who had completed the second quarter and remained to complete the third quarter. This difference was probably due in part, if not wholly, to the fact that the summer vacation period occurred for Group IV Low's at the end of the second quarter and occurred for all other groups at the end of the third quarter. There were no significant differences on all other comparisons among the groups, the High/Low classification, or the High/Low subgroup categories on the number of subjects who had completed any previous given quarter and who remained to complete the subsequent quarter.

All Schools. Table 4.9 presents the percentages of subjects remaining in school (all schools) each subsequent quarter, the percentage being based on the number of subjects having completed a given previous quarter. The chi-square test was used to analyze these data. When the groups and subgroups were compared with each other, there were no significant differences among groups, High/Low classification, or High/Low subgroup categories in regard to the number of subjects who had completed any given previous quarter and remained to complete the subsequent quarter.

Two-Year Retention

In this section the following question is answered: "Is there a significant difference among EFY groups or subgroups in regard to the number of subjects who started the program and completed each of the six quarters?"

At SIU. Table 4.10 contains the percentages of subjects remaining at Southern Illinois University each quarter, the percentage being based on the number of subjects who started the program.

TABLE 4.9

PERCENTAGES OF EFY STUDENTS REMAINING IN SCHOOL EACH QUARTER
OF STUDENTS COMPLETING PREVIOUS QUARTER

EFY Groups and ACT Classification	Percentages of Students						
	Started 1st Qtr.	Completed 1st Qtr. of started 1st Qtr.	Completed 2nd Qtr. of Compl. 1st Qtr.	Completed 3rd Qtr. of Compl. 2nd Qtr.	Completed 4th Qtr. of Compl. 3rd Qtr.	Completed 5th Qtr. of Compl. 4th Qtr.	Completed 6th Qtr. of Compl. 5th Qtr.
EFY Totals	100%	96.4%	83.3%	85.5%	85.0%	82.4%	*
Classified by ACT							
EFY ACT 20+	100%	95.2%	89.0%	89.9%	88.8%	90.1%	82.8%
EFY ACT 19-	100%	97.1%	87.9%	82.8%	82.5%	76.7%	*
Classified by EFY Group							
Group I	100%	95.5%	93.7%	83.1%	92.3%	83.3%	80.0%
Group II	100%	95.9%	93.0%	93.9%	85.5%	77.4%	80.5%
Group III	100%	95.0%	92.1%	88.6%	79.0%	83.7%	82.9%
Group IV	100%	100%	70.9%	61.5%	83.3%	90.0%	*
Classified by EFY Group and ACT							
Group I ACT 20+	100%	95.5%	100%	85.7%	94.4%	94.1%	75.0%
Group I ACT 19-	100%	95.5%	90.5%	89.5%	91.2%	77.4%	83.3%
Group II ACT 20+	100%	96.7%	93.1%	100%	92.6%	84.0%	76.2%
Group II ACT 19-	100%	95.5%	92.9%	89.7%	80.0%	71.4%	85.0%
Group III ACT 20+	100%	90.6%	89.7%	92.3%	87.5%	90.5%	89.5%
Group III ACT 19-	100%	97.9%	93.6%	86.4%	73.7%	78.6%	77.3%
Group IV ACT 20+	100%	100%	71.4%	73.3%	72.7%	100%	100%
Group IV ACT 19-	100%	100%	70.6%	54.2%	92.3%	83.3%	*

* The data for Group IV Low's (below 19 on composite ACT score) were not complete for the sixth quarter and therefore are not reported in these data.

TABLE 4.10

PERCENTAGES OF EFY STUDENTS REMAINING IN SIU EACH QUARTER

EFY Groups and ACT Classification	Percentages of Students					
	Started 1st Qtr.	Completed 1st Qtr.	Completed 2nd Qtr.	Completed 3rd Qtr.	Completed 4 Qtrs.	Completed 5 Qtrs. 6 Qtrs.
EFY Totals	100%	96.3%	85.1%	72.7%	56.0%	45.5% *
Norm Totals (V & VI)	100%	97.5%	87.0%	80.5%	60.0%	57.0% 52.0%
Classified by ACT						
EFY ACT 20+	100%	95.2%	84.8%	76.2%	61.0%	55.2% 45.7%
EFY ACT 19-	100%	97.1%	85.3%	70.6%	52.9%	39.4% *
Norm ACT 20+	100%	100%	92.0%	87.0%	70.0%	68.0% 63.0%
Norm ACT 19-	100%	85.0%	82.0%	74.0%	50.0%	46.0% 40.0%
Classified by EFY Group						
Group I	100%	95.5%	89.4%	78.8%	69.7%	57.6% 45.5%
Group II	100%	95.9%	89.2%	83.8%	63.5%	48.6% 37.8%
Group III	100%	95.0%	87.5%	77.5%	52.5%	42.5% 36.3%
Group IV	100%	100%	70.9%	43.6%	34.5%	30.9% *
Group V	100%	96.0%	78.0%	78.0%	54.0%	48.0% 44.0%
Group VI	100%	99.0%	83.0%	83.0%	66.0%	65.0% 59.0%
Classified by EFY Group and ACT						
Group I ACT 20+	100%	95.5%	95.5%	81.8%	72.7%	72.7% 54.5%
Group I ACT 19-	100%	95.5%	86.4%	77.3%	68.2%	50.0% 40.9%
Group II ACT 20+	100%	96.7%	90.0%	90.0%	76.7%	63.3% 50.0%
Group II ACT 19-	100%	95.5%	88.6%	79.5%	54.5%	38.6% 29.5%
Group III ACT 20+	100%	90.6%	81.3%	75.0%	56.3%	50.0% 43.8%
Group III ACT 19-	100%	97.9%	91.7%	79.2%	50.0%	37.5% 31.3%
Group IV ACT 20+	100%	100%	71.4%	52.4%	33.3%	33.3% *
Group IV ACT 19-	100%	100%	70.6%	38.2%	35.3%	29.4% *
Group V ACT 20+	100%	100%	86.0%	84.0%	68.0%	64.0% 58.0%
Group V ACT 19-	100%	92.0%	80.0%	72.0%	40.0%	34.0% 30.0%
Group VI ACT 20+	100%	100%	98.0%	90.0%	72.0%	72.0% 70.0%
Group VI ACT 19-	100%	98.0%	84.0%	76.0%	60.0%	58.0% 50.0%

* The data for Group IV Low's (below 19 on composite ACT score) were not complete for the sixth quarter and therefore are not reported in these data.

The chi-square analysis was used to analyze the data regarding the number of subjects who had started the program and remained to complete each of six respective quarters. There were no statistically significant differences among Groups I, II, and III, by groups, by High/Low, or by High/Low subgroup categories. There were significantly fewer subjects retained in Group IV than were retained in the other five groups for the third quarter. During the fourth and fifth quarters, Group IV retained significantly fewer subjects than Groups I, II, and VI. Sixth quarter retention data for Group IV were not available. The only significant difference not involving Group IV was that Group III had a significantly lower retention rate than Group VI for the fifth and sixth quarters. These data are reported in Table 4.11.

During the fifth and sixth quarters the ACT High classification in the two norm groups combined, retained significantly more subjects than did the ACT Low classification in both norm groups combined. No other significant differences were found when the retention rates for ACT High subjects were compared with retention rates for the ACT Low subjects and when the ACT High/Low subgroup retention rates were compared.

At.All Schools. Table 4.12 contains the percentage of subjects remaining in school (all schools) each quarter, the percentage being based on the number of subjects who started the program. A chi-square test was applied to the data in this section, and the group comparisons which were found to be significantly different are reported in Table 4.13.

Among Groups I, II, and III, either by group, by High/Low, or by High/Low subgroup categories, there were no statistically significant differences with regard to the number of subjects who had started the program and remained to complete each of six respective quarters. The number of Group IV subjects

TABLE 4.11
SIGNIFICANT CHI-SQUARE RESULTS FROM COMPARISONS OF THE NUMBER OF SUBJECTS AT
SIU COMPLETING EACH QUARTER COMPARED WITH THE NUMBER OF SUBJECTS

WHO STARTED THE EPY PROGRAM CLASSIFIED BY GROUPS

Higher Group	Lower Group	Significant Chi Square Values					
		Completed 1st Qtr.	Completed 2nd Qtr.	Completed 3rd Qtr.	Completed 4th Qtr.	Completed 5th Qtr.	Completed * 6th Qtr.
I	IV			5.90 ^b	6.90 ^c	4.69 ^a	
II	IV			7.62 ^c	5.17 ^a		
III	IV			5.86 ^b			
V	IV			6.36 ^b			
VI	IV			7.96 ^c	6.40 ^b	7.79 ^c	
VI	III					4.09 ^a	4.70 ^a

a Significant at .05 level.

b Significant at .02 level.

c Significant at .01 level.

* The data for Group IV Low's (below 19 on composite ACT score) were not complete for the sixth quarter and therefore are not reported in these data.

TABLE 4.12

PERCENTAGES OF EFY STUDENTS REMAINING IN SCHOOL EACH
QUARTER OF STUDENTS STARTING PROGRAM

EFY Groups and ACT Classification	Percentages of EFY Students					
	Started 1st Qtr.	Completed 1st Qtr.	Completed 2nd Qtr.	Completed 3rd Qtr.	Completed 4 Qtrs.	Completed 5 Qtrs. 6 Qtrs.
EFY Totals	100%	96.3%	85.0%	72.7%	61.8%	50.9% *
Classified by ACT						
ACT 20+	100%	95.2%	84.8%	76.2%	67.6%	61.0% 50.5%
ACT 19-	100%	97.1%	85.3%	70.6%	58.2%	44.7% *
Classified by EFY Group						
Group I	100%	95.5%	89.4%	78.8%	72.7%	60.6% 48.5%
Group II	100%	95.9%	89.2%	83.8%	71.6%	55.4% 44.6%
Group III	100%	95.0%	87.5%	77.5%	61.3%	51.3% 42.5%
Group IV	100%	100%	70.9%	43.6%	36.4%	32.7% *
Classified by EFY Group and ACT						
Group I ACT 20+	100%	95.5%	95.5%	81.8%	77.3%	72.7% 54.5%
Group I ACT 19-	100%	95.5%	86.4%	77.3%	70.5%	54.5% 45.5%
Group II ACT 20+	100%	96.7%	90.0%	90.0%	83.3%	70.0% 53.3%
Group II ACT 19-	100%	95.5%	88.6%	79.5%	63.6%	45.5% 36.6%
Group III ACT 20+	100%	90.6%	81.3%	75.0%	65.6%	59.4% 53.1%
Group III ACT 19-	100%	97.9%	91.7%	79.2%	58.3%	45.8% 35.4%
Group IV ACT 20+	100%	100%	71.4%	52.4%	38.1%	36.1% 30.1%
Group IV ACT 19-	100%	100%	70.6%	38.2%	35.3%	29.4% *

* The data for Group IV Low's (below 19 on composite ACT score) were not complete for the sixth quarter and therefore are not reported in these data.

TABLE 4. 13

SIGNIFICANT CHI SQUARE RESULTS FROM COMPARISONS OF THE NUMBER OF SUBJECTS AT ALL SCHOOLS
COMPLETING EACH QUARTER COMPARED WITH THE NUMBER OF SUBJECTS WHO
STARTED THE EFY PROGRAM CLASSIFIED BY GROUPS

Higher Group	Lower Group	Significant Chi Square Values					
		Completed 1st Qtr.	Completed 2nd Qtr.	Completed 3rd Qtr.	Completed 4th Qtr.	Completed 5th Qtr.	Completed 6th Qtr. *
I	IV			5.90 ^b			
II	IV			7.62 ^c			
III	IV			5.86 ^b			
I	IV				7.05 ^c		
II	IV				6.93 ^c		
III	IV				3.94 ^a		
I	IV					4.86 ^a	

a Significant at .05 level.
b Significant at .02 level.
c Significant at .01 level.

* The data for Group IV Low's (below 19 on composite ACT score) were not complete for the sixth quarter and therefore are not reported in these data.

remaining in school, of those who had started, was less than the number of various other groups during the third, fourth, and fifth quarters. Group IV was not compared with the other three groups for retention at the end of the sixth quarter.

Second Year Retention

In this section the following question is answered: "Is there a significant difference among EFY groups or subgroups with regard to the number of subjects who completed the first year and completed the fourth quarter, the fifth quarter, or the sixth quarter?"

At SIU. Table 4.14 contains the percentage figures for subjects who completed the first year and remained at Southern Illinois University to complete the fourth, fifth, or sixth quarters. The chi-square test was used for the analysis of the data in this section.

There were no significant differences among EFY groups and subgroups in regard to the number of subjects who completed three successive quarters and remained to complete the fourth, fifth, or sixth quarters at Southern Illinois University.

All Schools. Table 4.15 contains the percentage figures for subjects who completed the first year and then completed the fourth, fifth, and sixth quarters at all schools. A comparison of groups, High/Low, and High/Low subgroups revealed no significant differences in the number of subjects who completed three successive quarters and remained to complete the fourth, fifth, or sixth quarters.

TABLE 4.14
PERCENTAGES OF EFY STUDENTS REMAINING IN SIU EACH QUARTER
OF STUDENTS COMPLETING THREE SUCCESSIVE QUARTERS

EFY Groups and ACT Classification	Percentages of Students			
	Completed 3 Successive Quarters	Completed 4th Qtr. of Completed 3 Qtrs.	Completed 5th Qtr. of Completed 3 Qtrs.	Completed 6th Qtr. of Completed 3 Qtrs.
EFY Totals	100%	77.0%	62.5%	*
Norm Totals (V & VI)	100%	74.5%	70.3%	64.5%
Classified by ACT				
EFY ACT 20+	100%	80.0%	72.5%	60.0%
EFY ACT 19-	100%	75.0%	55.6%	*
Norm ACT 20+	100%	80.4%	78.1%	73.6%
Norm ACT 19-	100%	67.6%	62.2%	54.0%
Classified by EFY Group				
Group I	100%	88.5%	73.1%	57.7%
Group II	100%	75.9%	58.1%	45.2%
Group III	100%	67.7%	54.8%	46.8%
Group IV	100%	79.2%	70.8%	*
Group V	100%	69.2%	62.8%	56.4%
Group VI	100%	79.5%	78.3%	71.1%
Classified by EFY Group and ACT				
Group I ACT 20+	100%	88.9%	88.9%	66.7%
Group I ACT 19-	100%	33.2%	64.7%	52.5%
Group II ACT 20+	100%	85.2%	70.4%	55.6%
Group II ACT 19-	100%	58.6%	48.6%	37.1%
Group III ACT 20+	100%	75.0%	66.7%	58.3%
Group III ACT 19-	100%	63.2%	47.4%	39.5%
Group IV ACT 20+	100%	63.5%	63.6%	63.6%
Group IV ACT 19-	100%	92.3%	76.9%	*
Group V ACT 20+	100%	81.0%	76.2%	69.0%
Group V ACT 19-	100%	55.6%	47.2%	41.7%
Group VI ACT 20+	100%	80.0%	80.0%	77.8%
Group VI ACT 19-	100%	78.9%	76.3%	65.8%

* The data for Group IV Low's (below 19 on composite ACT score) were not complete for the sixth quarter and therefore are not reported in these data.

TABLE 4.15
PERCENTAGES OF EFY STUDENTS REMAINING IN SCHOOL EACH QUARTER
OF STUDENTS COMPLETING THREE SUCCESSIVE QUARTERS

EFY Groups and ACT Classification	Percentages of EFY Students			
	Completed 3 Successive Quarters	Completed 4th Qtr. of Completed 3 Qtrs.	Completed 5th Qtr. of Completed 3 Qtrs.	Completed 6th Qtr. of Completed 3 Qtrs.
EFY Totals	100%	85.0%	70.0%	*
Classified by ACT				
EFY ACT 20+	100%	88.8%	80.0%	66.3%
EFY ACT 19-	100%	82.5%	63.3%	*
Classified by EFY Group				
Group I	100%	92.3%	76.0%	61.5%
Group II	100%	85.5%	66.1%	53.2%
Group III	100%	79.0%	66.1%	54.8%
Group IV	100%	83.3%	75.0%	*
Classified by EFY Group and ACT				
Group I ACT 20+	100%	94.4%	88.9%	66.7%
Group I ACT 19-	100%	91.2%	70.6%	58.8%
Group II ACT 20+	100%	92.6%	77.8%	59.3%
Group II ACT 19-	100%	80.0%	57.1%	48.6%
Group III ACT 20+	100%	87.5%	79.2%	70.8%
Group III ACT 19-	100%	73.7%	57.9%	44.7%
Group IV ACT 20+	100%	72.7%	72.7%	72.7%
Group IV ACT 19-	100%	92.3%	76.9%	*

* The data for Group IV Low's (below 19 on composite ACT score) were not complete for the sixth quarter and therefore are not reported in these data.

Quality of Academic Performance

The first two sections in this chapter deal with the number of subjects who remained in school. This section, which focuses on the quality of the subjects' academic performance, is concerned, generally, with the question of whether the subjects differed with respect to this quality. Quality here refers to measures of grade point averages (GPA's) and of the General Culture Test scores.

Grade point average (GPA) is examined as a criterion measure of the quality of academic performance and is presented in the following categories in this section. First, the first year cumulative GPA provides information about academic performance at the end of the first year of college work. This criterion is important because it provides the first index of academic achievement for those subjects who completed the treatment and control programs which had extended over three successive quarters of college work.

Second, the cumulative GPA's for fourth, fifth, and sixth quarters are examined. The cumulative GPA criteria for this second year are important because they provide comparison of the academic performance of subjects who completed the experimental and control programs during the first year.

Third, GPA is considered with respect to General Studies courses areas, with respect to the number of hours passed, and with respect to other criteria. This analysis was done in an attempt to probe for more specific GPA effects produced by the various programs. Fourth, the GPA for only the second year, independent of the first year GPA, is discussed.

The fifth and final criterion measure considered is the subjects' scores from the General Culture Test (GCT) which was administered during the second year the subjects were in school.

The numbers of subjects, the means, and the standard deviations for the cumulative GPA's for groups and subgroups are reported for each of six quarters in Table 4.16, a table referred to throughout this portion of the chapter.

The EFY groups and subgroups were compared to determine whether there were statistically significant differences on the data reported above. First, the analysis of variance test or the analysis of covariance test was applied to the data. When significant F's were derived, t-tests were used to test for differences among groups and subgroups. Because there were significant differences on ACT scores among Group IV and Groups I, II, and III at the beginning of the program and because these differences were no longer apparent at, or after, the end of second quarter, the analysis of variance test was used, instead of the analysis of covariance test, in order to test the effects of the treatment and control programs. However, when there were significant differences in ACT scores, for critical quarters, between norm groups and experimental and control groups, the analysis of covariance test was also applied to the GPA data to determine the impact of the treatment and control programs on GPA independent of the effects of ACT differences.

Two other GPA data categories were investigated but are not included in the following section. The latest cumulative GPA was examined as a possible criterion for differentiating between the impacts of the first year treatments. The main feature of this criterion is that data for subjects who left school are included in the analysis along with data for subjects who remained in school. The latest cumulative GPA for subjects who dropped out of school are used in the analysis because a recent critical review of over- and under-achievement research suggested a measure of such a

TABLE 4.16 (continued)

CUMULATIVE GPA DATA FOR THE FOURTH, FIFTH, AND SIXTH QUARTERS FOR EFY SUBJECTS WHO COMPLETED EACH OF THE FOURTH, FIFTH, AND SIXTH QUARTERS AT SIU CLASSIFIED BY GROUPS AND ACT HIGH/LOW SUBGROUPS

Group	Completed Fourth Quarter		Completed Fifth Quarter		Completed Sixth Quarter	
	N	Mean	N	Mean	N	Mean
Subjects Classified by Groups						
I	46	2.91	38	3.02	30	3.09
II	47	2.71	36	2.82	28	2.94
III	42	2.83	34	2.97	29	3.03
IV	19	2.89	17	2.91	*	*
V	54	3.32	49	3.33	44	3.41
VI	66	3.30	65	3.33	59	3.33
SD						
I		.629		.550		.511
II		.384		.462		.331
III		.521		.359		.308
IV		.464		.472		*
V		.565		.564		.489
VI		.560		.495		.485
ACT High Subjects Classified by Groups						
I	16	3.03	16	3.05	12	3.08
II	23	2.75	19	2.89	15	2.95
III	13	2.98	16	2.99	14	3.13
IV	7	3.14	7	3.15	7	3.14
V	34	3.48	32	3.50	29	3.54
VI	36	3.50	36	3.48	34	3.49
SD						
I		.546		.500		.471
II		.388		.518		.375
III		.443		.386		.314
IV		.485		.423		.354
V		.568		.548		.464
VI		.542		.515		.502
ACT Low Subjects Classified by Groups						
I	30	2.35	22	3.00	18	3.09
II	24	2.68	17	2.74	13	2.92
III	24	2.71	18	2.96	15	3.03
IV	12	2.75	10	2.74	*	*
V	20	3.05	17	3.01	15	3.16
VI	30	3.06	29	3.15	25	3.11
SD						
I		.670		.595		.550
II		.385		.391		.286
III		.552		.343		.304
IV		.400		.449		*
V		.460		.454		.448
VI		.483		.406		.372

* The data for Group IV Lows (19 or below on composite ACT score) were not complete for the sixth quarter and therefore are not reported in these data.

criterion might be a valuable index of achievement.* These data are reported in Appendix B of this chapter, and no conclusions are specified because of the limited findings.

The GPA data for independent quarters for terms three, four, five, and six were also analyzed. These data provide trend, and "point in time" information which are revealing, but not essential, for gaining an accurate account of the academic performance results. Therefore, the data for independent term GPA are located in Appendix C at the end of this chapter and are not discussed in this section.

There were a number of variables which are relative to academic performance but which were not controlled in this study. A few of these variables are mentioned here to alert the reader to adopt a cautious attitude when he reads the findings reported in this section. The subjects did not attend identical classes, although many took the same courses. The chronological sequence in which subjects took courses varied. One group had a special one-year curricula, at the end of which the subjects' grades were transferred to regular University course grades. These and other variables were not controlled during the study.

It is also important for the reader to realize that the GPA data reported for the second year are probably the most significant criteria for evaluating the quality of academic performance. The second year GPA data, which are independent of grades given during the first year, provide a reasonably reliable criteria for evaluating the quality of academic performance. Of course, even the grades for the second year are only an interim

*Robert L. Thorndike, The Concepts of Over- and Underachievement (New York: Columbia University, 1963).

report on the effects of the treatment. The real measure of the success of the treatments and controls can be determined only at the end of four years after the students entered the University.

Information presented in this section usually follows this order: First, the specific research question being examined is stated. Then the data are identified. Next, the statistical tests applied to the data are specified. Finally, the findings are reported. Because most of the significant data appear in tables, the discussion and report on the findings are limited.

First Year GPA Data

The first year grade point average (GPA) data were analyzed to determine whether there were significant differences among groups and subgroups in the quality of academic performance, as measured by GPA, at the end of the first year, or three consecutive quarters, of college work. The analysis of variance and t-test were applied to the GPA data to test the effects of the treatment and control programs without taking into account differences in ability, as measured by ACT, of the norm groups and Groups I and III. Because Group V was significantly higher than Groups I and III and Group VI was significantly higher than Group I on ACT composite scores at the end of the first year, the analysis of covariance test was also applied to the GPA data. The covariance analysis was done to determine the impact of the treatment and control programs on GPA independent of the effects of ACT differences among the six groups.

The data analyzed by the analysis of variance test are considered first. The numbers of subjects, the means, and the standard deviations for

GPA for students who completed the first year of college work are reported in Table 4.16. The significant t values for the differences among means for these groups and subgroups on first year GPA are reported in Table 4.17. The data in Table 4.17 show that Groups I, V, and VI had significantly higher GPA's at the end of the first year than Groups II and III. Group IV did not differ on first year GPA from Groups I, II, III, or V. This finding also reflects the fact that third term cumulative GPA represents the term after the heaviest incidence of EFY student dropout. The findings for High/Low subgroups comparisons on the first year GPA supported those for the group comparisons reported above.

The norm groups had significantly higher ACT composite scores than some other groups at the end of the first year. It was considered important to determine whether there were effects attributable to the treatment and control programs which were independent of the effects of ACT differences. Because these norm groups had these significantly higher ACT composite scores, it was necessary to apply the analysis of covariance test to the ACT data to adjust for the ACT differences. The analysis of covariance in this case serves to equalize ACT differences among the six groups and determines whether there are significant differences among the groups in respect to GPA. There were these differences in the findings for the two analyses. In the analysis of covariance test data, Group IV had a significantly higher GPA than Group II. Groups I, V, and VI did not differ from one another on first year GPA. The t values based on the analysis of covariance data are reported in Table 4.18. Equalizing the effects of ACT differences, by using the analysis of covariance test when comparing group GPA's at the end of the first year, tended to produce about the same

TABLE 4.17

SIGNIFICANT t-TEST RESULTS AND RELATED DATA ON THIRD QUARTER
 CUMULATIVE GPA FOR EFY SUBJECTS WHO COMPLETED AT LEAST THREE
 QUARTERS COMPARED BY GROUPS AND ACT HIGH/LOW SUBGROUPS
 BASED ON ANALYSIS OF VARIANCE DATA

Groups Compared		N	Mean	Standard Deviation	<u>t</u> value	Significance Level
Higher Group	Lower Group					
I	II	52 62	2.99 2.60	.736 .499	3.00	.01
I	III	52 62	2.99 2.71	.736 .612	2.21	.05
V	II	73 62	3.19 2.60	.721 .499	5.00	.001
V	III	73 62	3.19 2.71	.721 .612	4.21	.001
VI	I	33 52	3.23 2.99	.610 .736	1.97	.05
VI	II	33 62	3.23 2.60	.610 .499	5.43	.001
VI	III	33 62	3.23 2.71	.610 .612	4.54	.001
VI	IV	33 24	3.23 2.91	.610 .480	1.98	.05
I High	II High	18 27	3.14 2.68	.749 .472	2.28	.05
V High	II High	42 27	3.49 2.68	.658 .472	4.96	.001
V High	III High	42 24	3.49 3.00	.658 .486	2.89	.01

continued

TABLE 4.17

continued

Groups Compared		N	Mean	Standard Deviation	<u>t</u> value	Significance Level
Higher Group	Lower Group					
VI High		45	3.43	.538		
II High		27	2.63	.472	4.62	.001
VI High		45	3.43	.538		
III High		24	3.00	.436	2.54	.02
I Low		34	2.91	.727		
II Low		35	2.55	.513	2.34	.02
I Low		34	2.91	.727		
III Low		33	2.52	.616	2.57	.02
V Low		36	2.35	.640		
II Low		35	2.55	.513	1.97	.05
V Low		36	2.35	.640		
III Low		33	2.52	.616	2.19	.05
VI Low		33	2.99	.554		
II Low		35	2.55	.513	2.93	.01
VI Low		33	2.99	.554		
III Low		33	2.52	.616	3.13	.01

TABLE 4.18

SIGNIFICANT t-TEST RESULTS AND RELATED DATA ON
THIRD QUARTER CUMULATIVE GPA FOR EFY SUBJECTS WHO COMPLETED
AT LEAST THREE QUARTERS COMPARED BY GROUPS AND ACT HIGH/LOW SUBGROUPS
BASED ON ANALYSIS OF COVARIANCE DATA

Groups Compared		N	Mean*	Standard Deviation	<u>t</u> value	Significance Level
Higher Group	Lower Group					
I	II	52 62	3.08 2.64	.040 .244	3.87	.001
I	III	52 62	3.08 2.75	.040 .347	2.88	.01
IV	II	24 62	2.93 2.64	.358 .244	2.02	.05
V	II	78 62	3.13 2.64	.978 .244	4.77	.001
V	III	78 62	3.13 2.75	.978 .347	3.67	.001
VI	II	32 62	3.16 2.64	.863 .244	5.21	.001
VI	III	32 62	3.16 2.75	.863 .347	4.10	.001
I High	II High	18 27	3.14 2.68	.749 .472	2.28	.05
V High	II High	42 27	3.49 2.68	.658 .472	4.96	.001
V High	III High	42 24	3.49 3.00	.658 .436	2.89	.01
VI High	II High	45 27	3.43 2.68	.583 .472	4.62	.001

continued

TABLE 4.18

continued

Groups Compared		N	Mean*	Standard Deviation	t value	Significance Level
Higher Group	Lower Group					
VI High		45	3.43	.538		
	III High	24	3.00	.486	2.54	.02
I Low		34	2.95	.543		
	II Low	35	2.55	.502	2.81	.01
I Low		34	2.95	.543		
	III Low	38	2.51	.678	3.20	.01
V Low		36	2.80	.833		
	III Low	38	2.51	.678	2.14	.05
VI Low		37	2.99	.433		
	II Low	35	2.55	.502	3.20	.01
VI Low		37	2.99	.433		
	III Low	38	2.51	.678	3.60	.001

* The means for subjects classified by groups and ACT Low subgroups are adjusted means resulting from an analysis of covariance adjusting for ACT composite scores differences. Refer to Chapter III for a discussion of this matter.

findings that resulted from the analysis of variance computation. These similar findings indicate that variables other than those attributable to ability, as measured by ACT, were causing differences in GPA among groups. However, the analysis of variance test produced the lower t values and the lower significance levels. The cumulative third quarter mean GPA for the ACT High subjects, all groups combined, was significantly higher than the mean GPA for all ACT Low subjects. A further analysis comparing the ACT High subjects with the ACT Low subjects in each group led to these significant results: The High's were significantly higher than the Low's in Groups III, V, and VI. In Groups I, II, and IV the High's were not significantly different from the Low's relative to cumulative GPA. The findings mentioned in this paragraph are reported in Table 4.19.

Fourth Quarter GPA Data

The data for the subjects enrolled at Southern Illinois University were analyzed to determine whether there were significant differences among groups and subgroups with respect to cumulative GPA at the end of four quarters of college work.

The numbers of subjects enrolled, the means, and the standard deviations for fourth quarter cumulative GPA are reported in Table 4.16. An analysis of variance and t -test were applied to these data, and the significant results are reported in Table 4.20. There were no differences among Groups I, II, III, and IV at the end of fourth quarter, but there were significant differences between norm groups and Groups I, II, III, and IV on composite ACT scores. However, the analysis of covariance statistical test to adjust for these differences was not computed. The significant t values for High/Low by group comparisons also support the findings for groups listed above.

TABLE 4.19

SIGNIFICANT t TEST AND RELATED DATA ON CUMULATIVE GPA AT THE END OF THREE
DIFFERENT QUARTERS FOR ALL ACT HIGHS COMPARED WITH ALL ACT LOWS
AND WITHIN EACH GROUP ACT HIGHS COMPARED WITH ACT LOWS

Groups Compared		N	Mean	Standard Deviation	t Value	Significance Level
Higher Group	Lower Group					
Cumulative Third Quarter GPA						
All Highs		167	3.21	.647	6.632	.001
All Lows		194	2.76	.628		
III High		24	3.00	.486	3.499	.01
III Low		38	2.51	.616		
V High		42	3.49	.658	4.697	.001
V Low		36	2.80	.640		
Cumulative Fifth Quarter GPA						
All Highs		126	3.26	.556	4.397	.001
All Lows		112	2.97	.463		
V High		32	3.51	.548	3.544	.01
V Low		17	2.99	.453		
VI High		36	3.48	.514	2.983	.01
VI Low		29	3.14	.406		
Cumulative Sixth Quarter GPA						
All Highs		111	3.32	.491	3.793	.001
All Lows		86	3.07	.406		
V High		29	3.53	.464	2.626	.02
V Low		15	3.16	.448		
VI High		34	3.49	.502	3.282	.01
VI Low		25	3.11	.372		

TABLE 4.20

SIGNIFICANT t-TEST RESULTS AND RELATED DATA ON FOURTH QUARTER
 CUMULATIVE GPA FOR EFY SUBJECTS WHO COMPLETED AT LEAST FOUR
 QUARTERS AT SIU COMPARED BY GROUPS AND ACT HIGH/LOW SUBGROUPS

Groups Compared		N	Mean	Standard Deviation	<u>t</u> value	Significance Level
Higher Group	Lower Group					
V	I	54 46	3.32 2.91	.565 .629	3.41	.001
V	II	54 47	3.32 2.71	.565 .334	5.12	.001
V	III	54 42	3.32 2.82	.565 .521	4.05	.001
V	IV	54 19	3.32 2.89	.565 .464	2.63	.01
VI	I	66 46	3.30 2.91	.560 .629	3.43	.001
VI	II	66 47	3.30 2.71	.560 .334	5.22	.001
VI	III	66 42	3.30 2.83	.560 .521	4.09	.001
VI	IV	66 19	3.30 2.89	.560 .464	2.65	.01
V High	I High	34 16	3.48 3.03	.568 .546	2.44	.02
V High	II High	34 23	3.48 2.75	.568 .388	4.45	.001
V High	III High	34 13	3.48 2.93	.568 .443	2.31	.01

continued

TABLE 4.20

continued

Groups Compared		N	Mean	Standard Deviation	<u>t</u> value	Significance Level
Higher Group	Lower Group					
VI High	I High	36 16	3.50 3.03	.542 .546	2.62	.01
VI High	II High	36 23	3.50 2.75	.542 .333	4.63	.001
VI High	III High	36 18	3.50 2.93	.542 .443	3.01	.01
V Low	II Low	20 24	3.05 2.68	.460 .335	2.26	.05
V Low	III Low	20 24	3.05 2.71	.460 .552	2.07	.05
VI Low	II Low	30 24	3.06 2.68	.433 .335	2.56	.02
VI Low	III Low	30 24	3.06 2.71	.433 .552	2.35	.02

It should also be noted that the GPA for Group I subjects did not differ from the GPA for the other experimental or control groups but that the GPA for Group I subjects was significantly lower than the GPA for the norm groups. This finding is different from the finding for Group I at the end of the first year.

Fifth Quarter GPA

Groups and subgroups were compared on GPA at the end of the fifth quarter to determine whether there were significant differences among groups in respect to the quality of academic performance as measured by GPA. The comparisons for the end of fifth quarter were particularly important because the fifth quarter was the latest quarter for which data for all subjects in Group IV were available. The analysis of variance and t-test were applied to the fifth quarter data. It was not necessary to apply the analysis of covariance test to adjust for ACT differences among groups because the six groups did not differ from one another in respect to composite ACT scores. The below-reported differences between groups, then, were probably not attributable to differences in ability as measured by ACT composite scores.

The significant t values for fifth quarter cumulative GPA comparisons are reported in Table 4.21. This table shows that the norm groups, Groups V and VI, had a significantly higher cumulative fifth quarter GPA than Groups I, II, III, and IV. There were no significant differences between the two norm groups or among Groups I, II, III, and IV with respect to fifth quarter cumulative GPA. The High/Low subgroups comparisons support those findings listed for the groups. The High groups, as shown in Table 4.21, appear to account for most of the differences among groups. This observation is discussed more fully under the sixth quarter data.

TABLE 4.21

SIGNIFICANT t-TEST RESULTS AND RELATED DATA FOR FIFTH QUARTER
 CUMULATIVE GPA OF EFY SUBJECTS WHO COMPLETED AT LEAST FIVE
 QUARTERS AT SIU COMPARED BY GROUPS AND ACT HIGH/LOW SUBGROUPS

Groups Compared		N	Mean	Standard Deviation	<u>t</u> value	Significance Level
Higher Group	Lower Group					
V	I	49 38	3.33 3.02	.564 .550	2.65	.01
V	II	49 36	3.33 2.82	.564 .462	4.29	.001
V	III	49 34	3.33 2.97	.564 .359	2.97	.01
V	IV	49 17	3.33 2.91	.564 .472	2.77	.01
VI	I	65 38	3.33 3.02	.495 .550	2.83	.01
VI	II	65 36	3.33 2.82	.495 .462	4.57	.001
VI	III	65 34	3.33 2.97	.495 .359	3.16	.01
VI	IV	65 17	3.33 2.91	.495 .472	2.38	.01
V High	I High	32 16	3.50 3.05	.548 .500	2.56	.02
V High	II High	32 19	3.50 2.89	.548 .518	3.65	.001
V High	III High	32 16	3.50 2.99	.548 .386	2.91	.01

continued

TABLE 4.21

continued

Groups Compared		N	Mean	Standard Deviation	<u>t</u> value	Significance Level
Higher Group	Lower Group					
VI High		36	3.48	.515		
I High		16	3.05	.500	2.51	.02
VI High		36	3.48	.515		
II High		19	2.89	.518	3.63	.001
VI High		36	3.48	.515		
III High		16	2.99	.386	2.36	.01
VI Low		29	3.15	.406		
II Low		17	2.74	.391	2.76	.01
VI Low		29	3.15	.406		
IV Low		10	2.74	.449	2.31	.05

The cumulative fifth quarter mean GPA for the ACT High subjects, all groups combined, was significantly higher than the mean GPA for the ACT Low subjects in all groups. The within-group High/Low comparisons showed the High's to be significantly higher than the Low's for Groups V and VI. Table 4.19 shows that within Groups I, II, III, and IV there were no significant differences between the High's and the Low's. The data mentioned in this paragraph are reported in Table 4.19.

Sixth Quarter GPA

The sixth quarter grade point averages (GPA's) were analyzed to answer this question: "Were there significant differences among groups and subgroups in the quality of performance, as measured by GPA, at the end of six quarters of college work?" The GPA reported below is cumulative GPA for all six quarters. The analysis of variance and t-test were used to analyze the GPA data. It was not necessary to apply the analysis of covariance test to adjust for ACT differences among groups because the six groups did not differ from one another in respect to composite ACT scores at the end of the six quarters. The below-reported differences between groups then were not attributable to differences in ability as measured by ACT composite scores.

Cumulative GPA. The numbers of subjects enrolled at Southern Illinois University for the sixth quarter and their cumulative GPA means and standard deviations are reported in Table 4.16. The significant t values for sixth quarter cumulative GPA comparisons are shown in Table 4.22. Groups I, II, and III did not differ from one another. Each of Groups I, II, and III was significantly lower in cumulative sixth quarter GPA than Group V and Group

TABLE 4.22

SIGNIFICANT t-TEST RESULTS AND RELATED DATA
ON CUMULATIVE SIXTH QUARTER GPA FOR SUBJECTS WHO COMPLETED
SIX QUARTERS AT SIU COMPARED BY GROUPS AND ACT HIGH/LOW SUBGROUPS

Groups Compared		N	Mean	Standard Deviation	<u>t</u> value	Significance Level
Higher Group	Lower Group					
V	I	44 30	3.41 3.09	.489 .511	2.81	.01
V	II	44 28	3.41 2.94	.489 .331	4.04	.001
V	III	44 29	3.41 3.08	.489 .308	2.84	.01
VI	I	59 30	3.33 3.09	.485 .511	2.26	.05
VI	II	59 28	3.33 2.94	.485 .331	3.57	.001
VI	III	59 29	3.33 3.08	.485 .308	2.29	.05
V High	I High	29 12	3.54 3.08	.464 .471	2.59	.02
V High	II High	29 15	3.54 2.95	.464 .375	3.60	.001
V High	III High	29 14	3.54 3.13	.464 .314	2.43	.02
VI High	I High	34 12	3.49 3.08	.502 .471	2.38	.02
VI High	II High	34 15	3.49 2.95	.502 .375	3.39	.001
VI High	III High	34 14	3.49 3.13	.502 .314	2.20	.05

VI, the norm groups. Data for Group IV were not available for sixth quarter. When the ACT High groups were compared, each of Groups I, II, and III had significantly lower GPA's than Groups V and VI, but there were no significant differences among the five groups when the ACT Low's were compared. These patterns of significant t values support the contention that the differences among groups in the High category were probably accounting for most of the significant t values when the groups, including High and Low combined, were compared on GPA.

The cumulative sixth quarter mean GPA for the ACT High subjects, all groups combined, was significantly higher than the mean GPA for the ACT Low subjects, all groups combined. The within-groups High/Low comparisons showed the High's as significantly higher than the Low's for Groups V and VI. There were no significant differences between the High's and Low's within Groups I, II, III, and IV. These data are reported in Table 4.19.

Frequency Distribution. A frequency distribution of EFY subjects classified by ten GPA intervals for groups and subgroups was also made to determine whether there were significant individual differences patterns not apparent in the other GPA analyses. This frequency distribution is reported in Table 4.23. An examination of the data in this table suggests the above-reported analysis of GPA accurately reflects the pattern of differences in GPA for groups and subgroups.

Cumulative Credit Hours. The average number of credit hours and other descriptive data relating to credit hours earned at the end of all six quarters of college work are reported for groups and subgroups in Table 4.24. The data in this table show that Group I had accumulated the most hours, Group III the second most, and Group II, the least.

TABLE 4.23

FREQUENCY DISTRIBUTION OF GRADE POINT AVERAGES
OF EFY SUBJECTS AT THE END OF SIX QUARTERS

GPA Intervals	Group I		Group II		Group III		Group IV		Group V		Group VI	
	I+	I-	II+	II-	III+	III-	IV+	IV-	V+	V-	VI+	VI-
5.00 to 4.50									2		2	
4.49 to 4.00		1							3	2	5	
3.99 to 3.50	1	4	2		2	1	1		8	1	7	6
3.49 to 3.00	3	4	3	5	9	8	3		14	6	16	9
2.99 to 2.50	8	7	10	7	3	5	3		2	6	5	11
2.49 to 2.00		2		1		1						
1.99 and below												
TOTAL	12	18	15	13	14	15	7		29	15	35	26

TABLE 4.24

CUMULATIVE CREDIT HOURS PASSED BY THE END OF
SIX QUARTERS FOR EFY SUBJECTS WHO COMPLETED
SIX QUARTERS AT SIU CLASSIFIED BY GROUPS
AND ACT HIGH/LOW SUBGROUPS

Group	N	Mean	St. Dev.
Subjects Classified by Groups			
I	30	79.5	12.1
II	23	60.8	15.5
III	29	71.0	14.3
IV	*	*	*
V	44	86.3	13.3
VI	59	85.0	13.1
ACT High Subjects Classified by Groups			
I	12	76.4	8.3
II	15	61.1	16.6
III	14	73.7	12.3
IV	7	79.4	15.6
V	29	87.9	13.2
VI	34	89.0	10.9
ACT Low Subjects Classified by Groups			
I	13	81.6	13.7
II	13	60.4	14.8
III	15	68.5	15.6
IV	*	*	*
V	15	33.2	13.4
VI	25	79.4	13.9

* The data for Group IV Low's (below 19 on composite ACT score) were not complete for the sixth quarter and therefore are not reported in these data.

All Schools GPA. An analysis identical to the preceding one was done on another classification of GPA data. For this analysis, sixth quarter cumulative GPA data for subjects who completed six quarters at schools other than Southern Illinois University were added only to the GPA data for subjects who remained at Southern Illinois University. This classification of data is referred to as "all schools." In this analysis, data were for Groups I, II, III, and IV only. The analysis of variance test results indicated that there were no significant differences among groups or ACT subgroups, on cumulative sixth quarter mean GPA's for subjects attending all schools. These findings are reported in Tables 4.25, 4.26, and 4.27. It should be noted that this finding is consistent with the particular results of the preceding analysis which involved only EFY subjects who remained at Southern Illinois University.

Course Area GPA

An extensive analysis was conducted on GPA data classified by course area--science, social studies, humanities, communications--for both EFY subjects who were enrolled in Southern Illinois University and those subjects who attended other institutions of higher education. Because data for individuals enrolled in schools other than Southern Illinois University were not available for the subjects in Groups V and VI and because only limited data were available for the subjects in Group IV at the time the analysis was conducted, the analysis was restricted to subjects in Groups I, II, and III.

For this analysis GPA data for all courses taken in each of the General Studies areas, GSA, GSB, GSC, and GSD, and for non-General Studies

TABLE 4.25

RESULTS OF ONE-WAY ANALYSIS OF VARIANCE ON CUMULATIVE SIXTH QUARTER GPA
FOR SUBJECTS AT ALL SCHOOLS, GROUPS I, II, III AND IV COMPARED

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between Groups	.785	3	.261	
Within Groups	19.454	104	.187	
Total	20.240	107		1.399

TABLE 4.26

RESULTS OF ONE-WAY ANALYSIS OF VARIANCE ON CUMULATIVE SIXTH QUARTER
GPA FOR SUBJECTS AT ALL SCHOOLS, ACT HIGH SUBGROUPS
IN GROUPS I, II, III AND IV COMPARED

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between Groups	.265	3	.088	
Within Groups	8.082	49	.164	
Total	8.348	52		.536

TABLE 4.27

RESULTS OF ONE-WAY ANALYSIS OF VARIANCE ON CUMULATIVE SIXTH QUARTER
GPA FOR SUBJECTS AT ALL SCHOOLS, ACT LOW SUBGROUPS
IN GROUPS I, II, III AND IV COMPARED

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between Groups	.786	3	.262	
Within Groups	10.917	51	.214	
Total	11.703	54		1.223

courses were analyzed. This analysis included a breakdown of GPA data for subjects for the second year, 1963-64, only, and for the two-year period of the study, 1962-64. This analysis also considered the possibility that the number of credit hours which subjects had taken might prove to be influential in the quality of their performance. To examine this matter, the numbers of subjects completing six quarters were grouped into those completing (a) 48 or fewer credit hours, (b) 49 to 71 credit hours, (c) 72 to 96 credit hours, and (d) 97 or more credit hours. The GPA data for subjects in each of these categories were then tested for significance, by the various years, quarters, and General Studies categories specified above, to determine whether the subjects' performance differed among groups and subgroups for various total hours of course work and in various General Studies areas.

The findings from these data are not included in this two-year report because of dissimilarities in first year grading procedures, and limited data available for many categories. This detailed analysis would probably be more valuable at the end of four years, when more data would be accumulated by the subjects.

Second Year GPA

An analysis of the second year, 1963-64, cumulative GPA for Group I, II, III, and IV subjects who attended Southern Illinois University and other schools was conducted. This analysis included only work done in the second year. It was found that the four groups considered did not differ significantly from one another in respect to GPA for the second year. The numbers

of subjects, means, and standard deviations for subjects who completed at least four quarters are listed in Table 4.23. GPA data for the fourth, fifth, and sixth quarters, on a term-by-term basis, were also analyzed and provide "point in time" and trend information which support the second year GPA findings reported above. The term GPA data are in Appendix C of this chapter.

High/Low Within-Group Comparisons. Evidence across the two-year period suggests that while there were consistent High/Low differences on ACT composite score within all six groups, only within the norm groups were there High and Low differences relative to GPA. Throughout the second year there was a clear pattern in which the High's had significantly higher GPA's than the Low's within each of the two norm groups.

The other EFY groups showed no significant difference findings on GPA when High's and Low's were compared within groups, except at the end of the third quarter when there was a High/Low difference on GPA for Group III. (See Table 4.19). The reader will also remember that there were no High/Low differences on within-group comparisons for retention rates except for the fifth and sixth quarters. At the end of the fifth and sixth quarters, the number of starting subjects completing these quarters was significantly higher for the High group than for the Low group when the norm groups were combined for the High's and for the Low's. These findings considered together suggest that the ACT criterion of High/Low discriminates in respect to effective performance for the norm groups, those students graduating in the upper two-thirds of their high school classes, but does not necessarily discriminate for Groups I, II, III, and IV, those students graduating in the lowest third of their high school classes.

TABLE 4.28

SECOND YEAR CUMULATIVE GPA DATA FOR EFY SUBJECTS WHO COMPLETED
 AT LEAST FOUR QUARTERS CLASSIFIED BY GROUPS
 AND ACT HIGH/LOW SUBGROUPS
 FOR ALL SCHOOLS

Group	N	Mean	St. Dev.
Subjects Classified by Groups			
I	49	2.72	.760
II	52	2.65	.671
III	49	2.82	.632
IV	20	2.60	.611
ACT High Subjects Classified by Groups			
I	17	3.16	.654
II	24	2.71	.637
III	21	2.93	.587
IV	8	2.96	.416
ACT Low Subjects Classified by Groups			
I	32	2.48	.714
II	28	2.60	.706
III	28	2.74	.662
IV	12	2.36	.615

GPA Changes Throughout the Second Year. An additional question was asked relative to the GPA data for the second year: "Did significant changes occur in the GPA, from the end of the first year to the end of the second year, within the groups and subgroups?" A t-test for related measures and Pearson product moment correlation coefficient were computed on the cumulative GPA's for third and sixth quarters to provide information to answer this question. These data are reported in Table 4.29. Significant gains or losses between the end of the first year and the end of the second year were limited to two, both of which involved Group I. The mean cumulative GPA of 3.218 at the end of the third quarter was lowered significantly to 3.086 by the end of the second year. The other significant change occurred for the Group I Low subgroup; the mean cumulative GPA at the end of the first year was 3.315 and was lowered to 3.091 by the end of the second year. The correlations for these comparisons were .90 and .42, respectively. These high correlations, and the significant lowering of cumulative GPA throughout the second year, suggest two points. First, the students in Group I, and specifically those in Group I Low, received significantly lower grades during their second year than they did during their first year. Second, the high correlations suggest that while the GPA's were lowered significantly during the second year, the subjects' order from highest to lowest on cumulative GPA remained about the same at the end of the first year as at the end of the second year.

General Culture Test

Each spring the Southern Illinois University Counseling and Testing Center administers the Cooperative General Culture Test, Form A (GCT), to

TABLE 4.29
CHANGES IN CUMULATIVE GPA FROM THE END OF THIRD QUARTER TO THE END OF SIXTH QUARTER

Groups	N	3rd Term Mean	S.D.	6th Term Mean	S.D.	Direction of Difference	t Value	Sig. Level t's	Cor. Coeff.
I	30	3.210	.627	3.086	.511	Lower	2.674	.02	.907d
II	26	2.914	.344	2.936	.331	Higher	-.267	NSD	.172
III	29	3.074	.463	3.079	.308	Higher	-.089	NSD	.643d
IV*	16	3.007	.521	2.927	.431	Lower	1.479	NSD	.903d
V	44	3.374	.564	3.405	.433	Higher	-.331	NSD	.913d
VI	59	3.303	.494	3.329	.485	Higher	-1.050	NSD	.925d
I	12	3.073	.640	3.079	.471	Higher	-.065	NSD	.838d
II	15	2.955	.303	2.949	.375	Lower	.069	NSD	.542a
III	14	3.170	.373	3.130	.314	Lower	.657	NSD	.791d
IV	7	3.213	.331	3.147	.423	Lower	1.028	NSD	.916b
V	29	3.529	.511	3.534	.464	Higher	-.112	NSD	.870d
VI	34	3.457	.533	3.437	.502	Higher	-.939	NSD	.944d
I	13	3.315	.617	3.091	.550	Lower	4.750	.001	.947d
II	13	2.867	.390	2.922	.236	Higher	-.360	NSD	-.269
III	15	2.933	.530	3.032	.304	Higher	-.425	NSD	.542a
IV	9	2.347	.577	2.755	.473	Lower	1.065	NSD	.896c
V	15	3.075	.556	3.155	.443	Higher	-1.707	NSD	.957d
VI	25	3.093	.343	3.113	.372	Higher	-.439	NSD	.831d

* These are based on fifth quarter rather than sixth quarter because sixth quarter data were not available for the subjects in Group IV Low.

- a Significant at .05 level.
- b Significant at .02 level.
- c Significant at .01 level.
- d Significant at .001 level.

sophomores at Southern Illinois University. A sophomore at Southern Illinois University is defined as any full-time student who is pursuing a degree program and who has accumulated at least 48 quarter hours but less than 96 quarter hours. Because most of the EFY subjects who were enrolled at Southern Illinois University in the spring of 1964 were sophomores, the GCT results of 1964 for EFY subjects in Groups I, II, III, IV, V, and VI provided a convenient criterion with which to investigate the effects of the EFY group treatments. The GCT test is designed to provide a measure of general background in the five areas of social studies, literature, science, mathematics, and fine arts. A composite measure of these five areas is considered an overall index of general academic achievement or general cultural level. The content of the GCT is said to reflect the content of instruction generally found during the first two years of college.

The first step in analyzing the GCT data was to determine whether the groups of EFY subjects who took the GCT test were a representative sample of the EFY subjects who were enrolled at Southern Illinois University during the Spring Quarter, 1964. This procedure was necessary because the GCT is not a required test at Southern Illinois University, and some students do not take the test. A t-test for independent measures was used for this analysis. The mean GPA of EFY subjects who took the GCT was compared with the mean GPA of EFY subjects who did not take the test, on the criterion of sixth term cumulative GPA. The t value for this comparison of groups was not significant. It was concluded that the EFY subjects who took the GCT were a representative sample of those remaining in Southern Illinois University during Spring Quarter, 1964. The number of EFY subjects, all groups combined, who took the GCT test was 148, and the number of EFY subjects who did not take the test was 59.

The GCT data were analyzed with an analysis of variance statistical test. EFY groups and subgroups were compared on mean GCT scores for the five GCT area scores and the composite score. The GCT data are reported in Table 4.30.

There were no significant differences among EFY groups or subgroups on any of the five GCT area test scores or on the GCT composite test scores. Within-group comparisons showed ACT High's scoring significantly higher than ACT Low's in all groups. This significant High/Low difference is different from the GPA findings for Groups I, II, III, and IV. The High's and Low's were not significantly different on cumulative sixth quarter GPA.

TABLE 4.30

DATA ON THE SOCIAL STUDIES PART
OF THE GENERAL CULTURE TEST

Group	N	Mean	St. Dev.
Groups			
I	24	35.08	6.42
II	22	35.64	8.73
III	22	39.68	8.51
IV	10	37.60	8.91
V	28	39.11	8.49
VI	42	37.55	7.62
ACT High Subgroups			
I	9	39.56	6.60
II	10	41.80	4.19
III	11	43.00	7.96
IV	7	40.00	9.61
V	18	41.72	8.75
VI	26	40.08	7.23
ACT Low Subgroups			
I	15	32.40	4.72
II	12	30.50	8.23
III	11	36.36	8.03
IV	3	32.00	3.61
V	10	34.40	5.76
VI	16	33.44	6.52

TABLE 4.30
(Continued)

DATA ON THE LITERATURE PART
OF THE GENERAL CULTURE TEST

Group	N	Mean	St. Dev.
Groups			
I	24	19.50	5.80
II	22	20.36	5.45
III	22	20.64	6.49
IV	10	21.80	6.18
V	23	22.25	5.60
VI	42	21.31	6.51
ACT High Subgroups			
I	9	22.89	7.08
II	10	24.00	4.22
III	11	20.91	8.15
IV	7	21.86	7.43
V	18	23.17	5.76
VI	26	23.65	5.76
ACT Low Subgroups			
I	15	17.47	3.85
II	12	17.33	4.48
III	11	20.36	4.65
IV	3	21.67	2.52
V	10	20.60	5.17
VI	16	17.50	5.94

TABLE 4.30
(Continued)

DATA ON THE SCIENCE PART
OF THE GENERAL CULTURE TEST

Group	N	Mean	St. Dev.
Groups			
I	24	36.71	7.11
II	22	35.82	7.80
III	22	37.32	8.50
IV	10	36.00	8.41
V	28	39.43	6.90
VI	42	37.93	7.45
ACT High Subgroups			
I	9	38.22	7.93
II	10	41.80	4.94
III	11	42.18	4.94
IV	7	39.00	4.69
V	18	40.94	6.29
VI	26	40.27	7.30
ACT Low Subgroups			
I	15	35.80	6.69
II	12	30.83	6.04
III	11	32.46	8.68
IV	3	29.00	12.12
V	10	36.70	7.42
VI	16	34.13	6.16

TABLE 4.30
(Continued)

DATA ON THE MATHEMATICS PART
OF THE GENERAL CULTURE TEST

Group	N	Mean	St. Dev.
Groups			
I	24	25.25	5.84
II	22	26.64	4.65
III	22	28.23	5.54
IV	10	29.20	7.12
V	28	26.07	6.84
VI	42	26.38	6.62
ACT High Subgroups			
I	9	29.33	6.14
II	10	30.00	3.46
III	11	29.82	6.27
IV	7	29.43	8.30
V	18	28.17	5.54
VI	26	28.58	6.37
ACT Low Subgroups			
I	15	22.80	4.16
II	12	23.83	3.54
III	11	26.64	4.41
IV	3	28.67	4.51
V	10	22.30	7.60
VI	16	22.81	5.49

TABLE 4.30
(Continued)

DATA ON THE FINE ARTS PART
OF THE GENERAL CULTURE TEST

Group	N	Mean	St. Dev.
Groups			
I	24	20.79	5.94
II	22	21.73	7.91
III	22	23.96	8.71
IV	10	23.40	5.66
V	28	24.71	7.93
VI	42	23.17	8.61
ACT High Subgroups			
I	9	23.22	5.87
II	10	27.30	7.48
III	11	29.09	8.51
IV	7	24.86	5.52
V	18	27.06	7.40
VI	26	24.65	9.66
ACT Low Subgroups			
I	15	19.33	5.68
II	12	17.08	4.68
III	11	18.82	5.36
IV	3	20.00	5.29
V	10	20.50	7.37
VI	16	20.75	6.07

TABLE 4.30
(Continued)

DATA ON THE TOTAL GENERAL CULTURE TEST

Group	N	Mean	St. Dev.
Groups			
I	24	137.33	23.74
II	22	140.18	27.25
III	22	149.82	25.77
IV	10	148.00	26.28
V	28	151.57	23.80
VI	42	146.33	26.30
ACT High Subgroups			
I	9	153.22	26.59
II	10	164.90	8.66
III	11	165.00	19.55
IV	7	155.14	27.69
V	18	161.06	22.63
VI	26	157.23	24.06
ACT Low Subgroups			
I	15	127.80	16.18
II	12	119.58	18.38
III	11	134.64	22.49
IV	3	131.33	14.57
V	10	134.50	15.09
VI	16	128.63	19.63

Prediction of Academic Performance

One of the objectives of the EFY program was to examine some of the criteria for admitting persons into Southern Illinois University. This section is concerned with predictors of academic performance, GPA. Three potential predictors of GPA are considered here: First quarter GPA, An Interviewer's Rating, and ACT scores.

The reader is cautioned to remember that a lapse of only two years after the study started is probably too early to determine the ultimate value of the predictors examined here.

First Quarter GPA As A Predictor of Academic Success

One of the findings reported in the survey of the literature in Chapter II was that grades predict grades. A more specific finding in the literature surveyed was that first quarter GPA in college was an effective predictor of later GPA performance. This latter finding is investigated in this part of the prediction section. The Pearson product moment correlation coefficient and the t-test for related measures were applied to the data reported in this section.

First Quarter GPA as a Predictor of Third Quarter GPA. Two questions were asked: "Is there a significant relationship between the first quarter GPA for subjects within EFY groups and subgroups and the cumulative GPA for these subjects at the end of the first year of college work?" "Is there a significant difference within the EFY groups and subgroups in regard to GPA received for the first quarter and the cumulative GPA received at the end of the first year?"

Correlation coefficients (r 's) comparing the relationship of first quarter GPA to the cumulative GPA at the end of the first year for groups and subgroups are reported in Table 4.31. Data for Group I are not included because grades were not recorded for this group until the end of the first year. All of the correlations of first quarter GPA with third quarter cumulative GPA were significant. The correlations for the norm groups, Groups V and VI, were higher than those for the other EFY groups and subgroups.

A t -test for related measures was computed within each group and subgroup to see if there was a significant difference between the GPA at the end of first quarter and the cumulative GPA at the end of the first year within each group and subgroup. Significant t values were found in this comparison for Group IV Low and Group II High. In both Group IV Low and Group II High the first term GPA was significantly higher than the third term cumulative GPA. The t values for these within-group and subgroup comparisons are not tabled.

It was determined from these data that first quarter GPA is an effective predictor of cumulative GPA at the end of the first year.

First Quarter GPA as a Predictor of Sixth Quarter GPA. The questions under consideration here are: "Is there a significant relationship between the first quarter GPA for subjects within EFY groups and subgroups and the cumulative GPA for these subjects at the end of the sixth term of college work?" "Is there a significant difference within the EFY groups and subgroups with respect to GPA received at the end of first quarter and the cumulative GPA received at the end of the sixth quarter of college work?"

The correlations for first quarter GPA with cumulative GPA for sixth quarter are listed in Table 4.31. Again, data for Group I are not included because grades were not recorded for this group until the end of the first year of the program. The correlation coefficients for the norm groups were still high at the end of the second year.

The correlation for first term GPA with the sixth quarter cumulative GPA were generally higher for the control groups, Groups III and IV, than for the experimental group, Group II. All of the correlations for the norm groups were significant, and all of the correlations, except those for the High subgroups, were significant for the control groups, Groups III and IV.

A t-test for related measures was used to test the significance of the difference between the GPA at the end of the first quarter and the GPA at the end of the sixth quarter within each group and subgroup. For Group III Low, the cumulative GPA at the end of the six terms was found to be significantly higher than the GPA at the end of the first term. There were no other significant t values on the within-group and subgroup comparisons. These t data are not tabled.

The prediction analysis showed first quarter GPA to be a highly accurate predictor of cumulative GPA at the end of six quarters for the norm groups; a reasonably good predictor for the control groups, Groups III and IV; and an ineffective predictor for Group II, one of the two experimental groups.

Interviewer's Rating and Achievement

The variables considered previously in this section are measures which have traditionally been examined as predictors of achievement.

TABLE 4.31

EFY GROUP AND SUBGROUP CORRELATIONS OF FIRST QUARTER GPA
WITH THIRD QUARTER AND SIXTH QUARTER CUMULATIVE GPA

Group*	Lowest One-Third										Upper Two-Thirds														
	Experimental Group					Control Groups					Norm Groups														
	Group II GPA's					Group III GPA's					Group IV**GPA's					Group V GPA's					Group VI GPA's				
	1st Qtr	With	1st Qtr	With	3rd Qtr	1st Qtr	With	1st Qtr	With	3rd Qtr	1st Qtr	With	1st Qtr	With	3rd Qtr	1st Qtr	With	3rd Qtr	1st Qtr	With	3rd Qtr				
	6th Qtr		6th Qtr			6th Qtr		6th Qtr			6th Qtr		6th Qtr			6th Qtr		6th Qtr		6th Qtr					
	r	Sig	r	Sig	r	Sig	r	Sig	r	Sig	r	Sig	r	Sig	r	Sig	r	Sig	r	Sig	r	Sig			
High		.58	.01	.53	.05	.69	.001	.23	NSD	.72	.02	.64	NSD	.84	.001	.69	.001	.87	.001	.83	.001				
Low		.72	.001	-.25	NSD	.66	.001	.69	.02	.62	.05	.72	.05	.79	.001	.93	.001	.82	.001	.69	.001				
Total Group		.67	.001	.13	NSD	.72	.001	.49	.02	.56	.01	.55	.05	.35	.001	.79	.001	.87	.001	.80	.001				

* The subjects in Group I received their grades for the first three quarters in one block at the end of their first year; therefore, cumulative GPA data are not available for Group I for the first and third quarters.

** The data for Group IV Low's, 19 or below on composite ACT score, were not complete for the sixth quarter and, therefore, are not reported in these data.

It is clear from the preceding findings, those presented in the survey of the literature in Chapter II and those presented previously in this section, that some of these traditional predictors of achievement are not entirely satisfactory. The effectiveness of an untried method for predicting achievement in college, an Interviewer's Rating, is reported here.

A discussion of the Interviewer's Rating procedures appears in Appendix C at the end of Chapter III. Briefly, Harold Cohen interviewed prospective EFY students with ACT scores of 19 or lower and rated these students, on the basis of the interviews, according to his estimate of their probable success in college work. An "A" rating indicated a prediction of the highest probability of success; a "B" rating indicated a somewhat lower probability; and a "C" rating indicated the lowest probability of success. Students in these classifications were equally distributed among the ACT Low EFY Groups I, II, and III. Two further classifications were added for comparison purposes. Class "D" High consisted of all students in EFY High subgroups of Groups I, II, and III, except for those few students who were interviewed and rated by Cohen prior to taking the ACT and subsequently found to have ACT scores above the mean. Class "D" Low consisted of all students in the ACT Low subgroups of EFY Groups I, II, and III who were not interviewed and rated by Cohen. Cohen considered his predictions valid for only those subjects whom he taught in Group I. The analysis presented here includes the subjects in Groups I, II, and III.

It was considered important to know whether persons in various classes of the rating system differed significantly in respect (1) to

retention rates at the end of six quarters of course work and (2) to GPA at the end of six quarters of course work. The rationale in the selection of data for the analysis presented here was as follows. If the Cohen system was an adequate predictor of success in college academic work, then it is reasonable to expect that, at the end of two years in college, the students in high success category "A" should significantly differ from those in the lower categories "B" and "C" with respect to retention rates and/or GPA. Predictions were not justified for the "D" categories, but comparisons were made in order to test the independent predictive elements of the rating system against the other predictive elements distributed among the sample.

Retention Rates as Discriminators. Two questions were asked to examine possible differences among the retention rates for subjects in the rating classifications: (1) "Is there a significant difference among the rating categories (A, B, C, D High, and D Low) in regard to the number of subjects in each category who started the program and the number who completed the sixth quarter?" (2) "Is there a significant difference among the rating categories in regard to the number of subjects in each category who completed the first year of the program and the number who completed the sixth quarter?" These data were analyzed by a chi-square test. Groups I, II, and III were combined to determine differences in retention rates as specified in the questions above. Each group was also analyzed independently. There were no significant differences which can be reliably reported on any of these analyses for retention rates. It appears that there were no significant differences among the rating system categories in regard to the number of subjects in each category who started the program and the number who completed six quarters,

nor were there any differences among those who completed the first year and those who completed the second year.

GPA As A Discriminator. The specific question considered here is: "Are there significant differences in the cumulative GPA's at the end of six quarters among all subjects in Groups I, II, and III combined, classified by the Rating Classification System?" An analysis of variance test was applied to these data. This analysis revealed there were no significant differences among the four categories in respect to GPA at the end of six quarters. The numbers of subjects, the means, and the standard deviations for the Rating Classification System are reported in Table 4.32. A more detailed analysis of the Rating Classification System in respect to GPA would be appropriate as the students progress in college.

In summary, it appears that at the end of two years the Rating Classification System does not discriminate between those who do and those who do not succeed academically, as measured by retention rates and sixth quarter cumulative GPA.

ACT As A Predictor of GPA

ACT is considered here as a predictor of academic success, GPA. The question under consideration is: "Is there a significant relationship within groups and subgroups between students' ACT scores and their sixth quarter cumulative GPA?" The Pearson product moment correlation was applied to the data. It should be remembered when examining the correlation coefficients here that the correlations between ACT scores and GPA within the High or Low classification would be much lower than those usually found between GPA and ability measures. These low correlations

TABLE 4.32

CUMULATIVE SIXTH QUARTER GPA DATA FOR
EFY SUBJECTS CLASSIFIED BY INTERVIEWER'S RATINGS

Rating Classification	N	Mean	GPA St. Dev.
A	15	3.010	.471
B	11	2.932	.370
C	8	2.989	.369
All Subjects	34	2.980	.407

would be expected because the groups had been divided on the basis of the High/Low ACT categories, and consequently the range of scores within these subgroups would necessarily be restricted. Thus correlations for the groups as a whole, representing the full range of ACT scores, can be considered the most meaningful values of the predictive power of the ACT.

Correlation. Data are presented in Table 4.33 for groups and subgroups. The norm groups, Groups V and VI, serve as a basis for examining the other EFY groups because the norm groups provide representative correlations for University norms for predicting GPA from ACT scores. It was found that the correlations for the norm groups (Group V, $r = .30$; Group VI, $r = .55$) were generally higher than for other EFY groups, with the exception of Group IV. Only the correlation for Group IV was statistically significant at the .01 level. It was also found that for Groups I and IV the correlation values were greater for the Low's than for the High's. These data are reported in Table 4.33. It is important to note the low positive and/or negative pattern of correlations which was found for the two experimental groups, Groups I and II, and for Group III Low subjects. This correlation pattern suggests that the ACT is not a particularly effective predictor for students graduating in the lowest third of their high school class.

The reader will recall that additional data supporting the contention that ACT is not an effective prediction for students graduating in the lowest third of their high school classes, were reported in the previous section in this chapter. Essentially it was stated that while there

TABLE 4.33

CORRELATIONS OF ACT COMPOSITE SCORES WITH SIXTH QUARTER GPA

Group	Lowest One-Third Students												Upper Two-Third Students					
	Experimental Groups						Control Groups						Norm Groups					
	I			II			III			IV*			V			VI		
	N	r	Sig	N	r	Sig	N	r	Sig	N	r	Sig	N	r	Sig	N	r	Sig
ACT High's (20+ on ACT)	12	-.15	NSD	15	-.43	NSD	14	.17	NSD	7	.39	NSD	29	.06	NSD	34	.41	.02
ACT Low's (19- on ACT)	18	.13	NSD	13	-.49	NSD	15	-.18	NSD	9	.67	.05	15	-.15	NSD	25	.47	.02
ACT Group (High's Plus Low's)	30	.00	NSD	28	-.18	NSD	29	.12	NSD	16	.64	.01	44	.30	.05	59	.55	.01

*: The data for Group IV Low's, 19 or below on composite ACT score, were not complete for the sixth quarter and, therefore, are not reported in these data.

were significant differences in respect to High/Low within group comparisons on ACT, for Groups I, II, III, and IV, there were no significant differences for High/Low within-group comparisons on cumulative second year GPA. However, it was found that there were significant differences for both norm groups, Group V and VI, on High/Low within group comparisons on both ACT and GPA.

These data reported earlier, as well as the correlation data reported here, suggest that for students graduating in the lowest one-third of their high school class, and particularly for such students who score below the mean on the ACT, the ACT is not an effective predictor of GPA at the end of the second year in college. On the other hand, the ACT is a reasonably effective predictor of second year GPA in college for those students graduating in the upper two-thirds of their high school graduating class.

Summary

Results from the Experimental Freshman Year Program at the end of two years were reported under four categories in this chapter: (1) Second Year Occupations, (2) Retention, (3) Quality of Academic Performance, and (4) Prediction of Academic Performance. The following points summarize the results listed here.

1. Questionnaire responses regarding the subjects' second year occupations indicated that 132 subjects attended Southern Illinois University, 14 subjects attended other schools, 34 subjects were working full time, seven subjects were in the military service, four subjects reported no major occupation, and nine subjects did not return questionnaires.

2. These findings were reported relative to retention:

- a. There were no statistically significant differences among EFY groups and subgroups in regard to the number of subjects who completed the treatment year and remained to complete the fourth, fifth, or sixth quarters.
- b. There were no significant differences among Groups I, II, and III regarding the number of subjects who had started the program and remained to complete each of six quarters.
- c. Group IV had significantly lower retention rates than some of the other groups during the third, fourth, and fifth quarters; data were not available to compare Group IV with other groups for sixth quarter.
- d. During the fifth and sixth quarters the High's in Groups V and VI, the norm groups, retained significantly more subjects than the Low's in the norm groups. There were no other significant High/Low differences in retention rates within groups.

3. These findings summarize the more significant points relative to the analysis of GPA and the General Culture Test.

- a. At the end of the sixth quarter there were no significant differences on GPA among Groups I, II, and III; (Group IV was not considered sixth quarter); Groups V and VI had significantly higher GPA's than Groups I, II, and III; the High's in Groups V and VI were significantly higher than the High's in Groups I, II, and III, but there were no significant differences among the Low's for all five

subgroups; all High's combined were significantly higher than all Low's; within Groups V and VI the High's were significantly higher than the Low's.

- b. An analysis of GPA data for work done during the second year only was conducted. The analysis included GPA data for subjects at Southern Illinois University and other schools; there were no significant differences among Groups I, II, III, and IV, the only groups included in the analysis.
- c. Significant findings from an analysis of GPA changes occurring between the end of the first year and the end of the second year, revealed that Group I and Subgroup I Low had significantly lower grades at the end of two years than at the end of the first year; and, the correlations for Group I and Subgroup I Low between the end of the first year GPA and the end of the second year GPA were respectively .90 and .94.
- d. A representative sample of EFY subjects in Groups I, II, III, IV, V, and VI took the General Culture Test during their second year at Southern Illinois University; there were no significant differences among groups or ACT subgroups on any of the five area test scores (mathematics, fine arts, literature, science and social studies) or on the composite test score.

*Within-group comparisons showed ACT High's scoring higher than ACT Low's in all groups. The Highs and Lows were not significantly different on cumulative sixth quarter GPA.

4. Three potential predictors of GPA were investigated, first quarter GPA, an Interviewer's Rating, and ACT scores.
 - a. First quarter GPA was found to be a highly accurate predictor of cumulative sixth quarter GPA for norm groups, Groups V and VI; a reasonably good predictor for the control groups, Groups III and IV; and an ineffective predictor for Group II, one of the experimental groups. Group I, the other experimental group, was not included in this analysis.
 - b. An interviewer's predictions regarding the academic performance of students was not successful in discriminating between subjects who remained in school for two years and those who dropped out or in discriminating between subjects who had high GPA's at the end of the second year and subjects who had lower GPA's.
 - c. The ACT composite score was found to be a reasonably accurate predictor of second year GPA for students who graduated in the highest two-thirds of their high school graduating class; but ACT was not an accurate predictor of second year GPA for students who graduated in the lowest one-third of their high school graduating class; the latter finding was particularly evident for students who scored below the ACT mean score.

APPENDIX A

Available Data on the
Experimental Freshman Year Program

This appendix consists of brief descriptions of available data derived from the Experimental Freshman Year Program. The data are divided into five sub-sections: (a) entrance qualification data from applicant selection procedures; (b) data related only to Group I; (c) data related to Group II only; (d) data related only to Groups I, II, and III; and (e) data related to Groups I, II, III, IV, V, and VI.

Entrance Qualification Data from Applicant Selection Procedures

In order to determine whether or not they would be allowed entrance into the Experimental Freshman Year Program, 220 applicants underwent a screening process. Data are available relative to the responses made on the request for public school officials to submit the names of eligible applicants for the EFY Program. Screening procedures from which data are available are: The Twenty-Four Hour Summary; a Word Association Test; a Visual Recording Task; Flanagan Aptitude Classification Tests in "Inspection" and "Components"; and a subjective rating which was made by the interviewer, Harold Cohen, after he had had a personal and secretly tape-recorded interview with each applicant.

Announcement Response Data. Records were made of the responses to the announcement of the Experimental Freshman Year Program, then known as the "Synergetics Program." The announcement had been sent to all Illinois high school principals and superintendents. Students who were recommended for the program were categorized by high school and by county.

Twenty-Four Hour Summary. Each applicant was given one half hour to write, in any verbal style he chose, a brief summary of his experiences for the preceding twenty-four hours. The EFY staff evaluated and rated the essay on a numerical system based on a maximum of twenty points; judgements were based on the following criteria: (1) (M) standard mechanics of composition; (2) (O) the organization of chronological or sequential occurrence; (3) (I) insight and intelligence in eclecticism; and (4) (D) disposition or aptitude in content.

Word Association Test. Applicants took a word association test which is described in the book: Creativity and Intelligence by Jacob W. Getzels and Philip W. Jackson (London: John Wiley & Sons, Inc., 1962, pp. 224, 225). The test was graded on the basis of the number of different correct meanings given for each of the sixteen words selected for the test. The individual's score depended upon the variety of meanings he wrote for each word, not upon repetition or minor variations of meanings of the term.

Recording of Visual Observations. Employing a black felt tip marker and a large pad of paper, each applicant made two freehand drawings, one of a potted plant and one of a stool upon which the plant was placed. The plant and stool were positioned approximately seven feet from the applicant. The applicants were given four minutes to complete the first drawing and two minutes to complete the second. The drawings were examined and filed in folders along with the other test and interview records.

Flanagan Aptitude Classification Test: "Inspection." Applicants took the F.A.C.T.: "Inspection" which measures the accuracy and speed with which subjects can spot flaws or imperfections in small objects. Each item

pictured line drawings of fifteen supposedly identical objects, some with slight flaws. The subject was required to find and check the objects with flaws.

Flanagan Aptitude Classification Test: "Components." Applicants took the F.A.C.T.: "Components," a test designed to test a person's ability to identify a simple figure that is part of a complex drawing. Each item in the test consists of line drawings of five simple parts of a drawing and two complex drawings. The subject was to find and check the simple part of the complex drawing in both cases.

Data from Interviews. Cohen interviewed 220 EFY Program applicants. The interviews, which averaged between 25 minutes and one hour in length, followed a pattern specified on mimeographed forms. The interviews were all tape recorded except for 13 which were lost because of electronic failures. Those tape recordings not lost were retained for possible future use. The interviewer rated each of the subjects on a scale from 0 to 20; he selected or rejected each applicant for the program immediately following the interview. The interviewee's score and selection/rejection status were recorded on his interview form and on the tape. Pertinent conditions of the interview were also recorded on the interview form and on tape.

Data Available for Students in Group I Only

The students in Group I received a more comprehensive treatment than any of the students in the other groups in the EFY Program. An effort was made to collect an extensive quantity of data related to the Group I students. The available data from Group I are: The Group I curriculum; The Group I tapes of lectures; The Group I staff research reports; The programmed

instruction response sheets and unit tests; The student record files; The master file of daily records; The scores and grades for students; The Spring Quarter pre-registration questionnaire; The Group I student post-questionnaire; and The Group I delayed-post-questionnaire.

EFY Group I Curriculum. The EFY Group I curriculum was specified in detail prior to each quarter and was revised after the courses were conducted so that there is a documented record of what actually occurred. Course descriptions, goals, techniques, and rationale are outlined in the curriculum statement.

Group I Tapes of Lectures. Approximately 450 hours of class lectures, group discussions, telephone amplified lectures, and student reports were recorded on audio tape. Some entire course series, such as the Iconography of God course, were recorded; however, most of the tapes were recorded merely to provide samples of each instructor's teaching techniques during various parts of the Group I courses.

Group I Staff Research Reports. At the end of the school year, each staff member working with Group I submitted a "research report" on the Experimental Freshman Year. The reports are subjective evaluations of the strengths, weaknesses, successes, and failures of the Experimental Freshman Year Program. The purpose of the reports is to provide information to guide future researchers in the event the Group I program is repeated.

Evening Programs for Academic Development. During Winter Quarter an "Evening Program for Academic Development" (EPAD) was initiated for the 23 EFY Group I students who demonstrated a need to upgrade particular academic skills and subjects. This project consisted of mandatory programmed instruction in Analysis of Behavior by Holland and Skinner and the TMI Grolier

programmed textbooks in Punctuation and Chemistry. The students were examined individually after they completed each programmed unit, a unit being comparable to a chapter in a regular textbook. Approximately one hour was required to complete each programmed unit. If a student scored below 90 per cent on a unit exam, he was required to repeat the unit. The students' response sheets were collected and are filed along with the unit tests.

Student Record Files. A file folder was maintained for each student in EFY Group I for each of the three quarters; a Daily Student Record was deposited in each folder. The Daily Student Record includes such data as reports of all significant interactions the student had with staff members, reports of any individual consultations between student and staff member, and records and documents relative to academic matters, this category including copies of all reports, tests, themes, projects, and visual work. Obtaining copies of all written material was possible primarily because of the extensive use of No-Carbon-Required paper.

Master File of Daily Records. A folder was placed on file for each day of the school year. In this folder EFY Group I staff members deposited an outline of classes taught each day and a record of other formal or informal interaction with EFY Group I students. These records include such things as evaluations of particular elements in a classroom experience, such as presentation of a movie or tape recording. Copies of all materials handed out to the students, such as assignments, exams, and readings, also are kept in this file.

Scores and Grades for Students. All scores, grades, ratings, and records of students' behavior on such items as quizzes, themes, projects,

and mid-term and final exams are preserved along with class attendance records. Also on file are the forms used for transferring each student's course credits from the EFY Group I program to the General Studies courses.

Spring Quarter Pre-Registration Questionnaire. During the Winter Quarter each EFY Group I student completed a questionnaire designed to determine (a) the number of quarter hours of General Studies he would like to take during Spring Quarter and (b) the specific General Studies courses he would like to take.

Group I Student Post-Questionnaire. In June, 1963, near the completion of their school year, the students in EFY Group I completed a questionnaire eliciting their attitudes and opinions toward the Experimental Freshman Year Program in general and toward the specific elements of the Group I program in particular. The questionnaire covered their reactions to such specific matters as how they liked having their classes with the same people all the time, whether the "special environmental conditions and spaces" satisfied their intended function, and whether they particularly enjoyed such courses as History of Man, Cell Physiology, and Iconography of God. The questionnaires were scored and coded onto IBM cards. Means and standard deviations of the scores on each item were computed.

Group I "Delayed-Post-Questionnaire." In May and June of 1964 a questionnaire was mailed to all students who completed the EFY Group I program. The items in the questionnaire asked for subjective impressions and evaluations of the various aspects of the EFY program in general and of the Group I program in particular. Many of the items in this "delayed-post" questionnaire were identical with those in the original Group I post-program questionnaire.

Data Available for Students in Group II Only

Because the students in Group II received an experimental treatment which was different from the experiences of other students in the EFY program, certain types of data were gathered only for the Group II students. The data from Group II which were available are: remedial studies program data; student evaluation of seminars and programmed instruction; group and individual counseling reports; and subjective observations and evaluations.

Remedial Studies Program Data. EFY Group II students took three quarters of non-credit remedial studies course work emphasizing proper attitudes toward learning, study and examination skills, communication skills, and problem-solving skills. Records of grades for the course of study have been kept. Winter and Spring Quarters remedial studies took the form of programmed instruction. TMI Grolier's mathematics series, Fundamentals of Algebra I and Fundamentals of Algebra II, TMI Grolier's Punctuation, Educational Development Laboratory's Word Clues: Book L, and EDL's Controlled Reader and Tach-X Tachistoscope were used for the work in programmed instruction. Records of student achievement levels before and after experience with the programmed texts and other progress data were maintained. Also collected were achievement records relevant to a programmed instruction unit in the use of commas. Leonard J. West, a Southern Illinois University faculty member, developed the program and the Group II students were used for the field trial for the program.

Student Evaluation of Seminars and Programmed Instruction. In March, the EFY Group II students responded anonymously to a brief three-page questionnaire which asked for their evaluation of various aspects of the programmed instruction and the seminar program. Some items asked for self-

ratings of participation and effort in the work. The bottom one-third of the last page asked for responses to items designed to determine the extent of participation in the proposed Spring Quarter seminar, which would be voluntary. The students were to tear off this lower portion, sign it, and return it to an EFY staff member. Data from this questionnaire are retained.

Group and Individual Counseling Reports. The Group II staff kept a file of reports on group counseling sessions, which were student discussion sessions, and of reports of individual counseling and consultation sessions. The group reports include attendance records, lists of discussion topics along with a notation of the amount of time devoted to them, descriptions of solutions reached, and, in some cases, reports of individual reactions to the discussion itself. Individual counseling session reports list the name of the student, the amount of time spent during the session, the name of the counselor, the topics discussed along with possible solutions suggested, and a description of the counselor's subjective evaluation of the usefulness of the session.

Individual Student Consultation Reports. Records were maintained on each individual student consultation session, except those sessions for advisement. The students were encouraged to make appointments to see staff members of their choice about any matter which was of concern to them. A consultation report was placed in each student's individual file. The report includes the following data: date; time; counselor; student; channel (phone, classroom, office, or other); source of initiation, i.e., staff or student; purpose of consultation; topics discussed; positive and negative observations; and additional comments.

Individual Student Files. A folder was maintained for each individual student. Correspondence with students and parents was placed in the students' individual folders. Other data in the individual students' folders include: high school transcript, term-by-term class schedules and changes, consultation reports, and other data relevant to academic, personal, or disciplinary matters.

Logical Reasoning Test Data. The students in Group II were given E. E. Bradley's Logical Reasoning Test which was designed to test the student's ability to discriminate between logical and illogical sets of information. The scores on this test are maintained, and data on a sample of the normative population of freshmen at Southern Illinois University are also available.

Subjective Observations and Recommendations. Following several staff meetings devoted to a discussion of improving aspects of the Group II program, a member of the Group II staff drew up a list of observations and recommendations. These comments are subjective evaluations.

Data Available for Students in Groups I, II, and III Only

A substantial quantity of data was collected for the students who were selected to participate in one of the three major groups in the EFY Program, Groups I, II, and III. It was possible to get certain descriptive and aptitude measures on these students that it was not possible to get on the students in the other comparison groups, Groups IV, V, and VI. The data available for Groups I, II, and III are: pre- and posttest data; non-participant's questionnaire; dropout questionnaire; activities questionnaire; pre-post program questionnaire; follow-up questionnaire; semantic differential scale; most-asked questions; and academic progress memos.

Pre- and Posttest Data. A battery of standardized tests was administered to EFY students in Groups I, II, and III both before they started and again after they completed the experimental program. The battery of tests included: the Sequential Tests of Educational Development (STEP) in social studies, science, mathematics, listening, reading, writing, and essay; the MSU English, Mathematics, and Critical Thinking tests; the Watson-Glazer Critical Thinking Test; the School and College Ability Test; the Oliver Educational Interest Inventory; the Wonderlic Personnel Test; the Minnesota Multiphasic Personality Inventory; the Wrenn Study Habits Inventory; the Guilford-Zimmerman Temperament Survey; and the Iowa Silent Reading Test. Test scores from both pre- and post-program administrations were coded onto IBM cards; then means and standard deviations for EFY Groups and subgroups based on group number and ACT High/Low classifications were computed for each test.

"Non-Participant's Questionnaire." During Fall Quarter, 1962, a questionnaire was mailed out to those persons who had been expected to enroll in the Experimental Freshman Year Program but who did not enroll in Southern Illinois University at all. This questionnaire, labeled the "Non-Participant's Questionnaire," asked for biographical and introspective data similar to that elicited on the pre-questionnaires and, in addition, included various items asking why the person did not come to Southern Illinois University and what he was doing instead of attending Southern Illinois University. The questionnaires were scored and the results punched onto IBM cards.

"Dropout" Questionnaire. Those EFY students in Groups I, II, or III who withdrew from the Experimental Freshman Year during the first year were

asked to complete a brief two-page questionnaire which asked questions designed to elicit reasons for the withdrawal, to ascertain educational plans for the future, to determine certain academic information, and to evaluate the Experimental Freshman Year Program. Some students withdrew and left Southern Illinois University without completing the questionnaire; they were mailed the questionnaire later. Only 27 questionnaires are available from the 44 EFY students who withdrew from the program in 1962-63.

Activities Questionnaire. In the fall of 1962, each student in Groups I, II, and III filled out an Activities Questionnaire. The questionnaire requested general information on preferences and evaluation of all extracurricular activities, whether high school, community, or college activities; it also included specific questions on specific extracurricular activities in which the student was engaged or had engaged. Items in the latter category asked for estimates of time spent in personal participation, evaluations of the desirability of membership in the organization, opinions about whether the student felt any social pressure to belong, conclusions about personal satisfaction gained from membership, and identification of the student's role in the organization, i.e., whether he was an officer, committee chairman, or the like.

Pre-Post-Program Questionnaire. In part of the pre-posttest battery mentioned above, the EFY students in Groups I, II, and III responded to a pre-program questionnaire and a post-program questionnaire. Several items in the two questionnaires were identical or similar; other items in the two questionnaires were unique to the one in which they appeared. The items were designed to elicit not only biographical and background information but also many opinions, attitudes, and expectations about school, future life, and the like.

Follow-up Questionnaire. In Spring, 1964, a follow-up questionnaire was mailed to all members of Groups I, II, and III. The items in the questionnaire requested information on the current activities of EFY students and sought their evaluations of their current activities, their evaluations of Southern Illinois University and their success there, and their evaluations of the EFY Program.

Semantic Differential Scale. Near the end of the EFY Program, the students in Groups I, II, and III responded to a semantic differential scale included in the posttest battery. The scale asked for responses to 29 items of the traditional value, activity, and potency dimensions of the concepts: "MY SUCCESS IN COLLEGE"; "MY INTELLIGENCE"; "MY ACADEMIC ACHIEVEMENT"; "MY ABILITY TO BE CREATIVE IN EVERYDAY SITUATIONS"; "ME: AS A STUDENT"; "MY ACADEMIC ABILITY"; "ME: AS A PERSON"; "MY ACADEMIC SUCCESS"; "MY ABILITY TO COMMUNICATE"; "ME: AS A MEMBER OF MY FAMILY"; "MY TENDENCY TO CONFORM"; "MY FEELINGS ABOUT THE EXPERIMENTAL STAFF"; and "MY FEELINGS ABOUT EXTRA-CURRICULAR ACTIVITIES." The results were scored and recorded on IBM cards.

Most-Asked Questions. A list of questions most frequently asked by EFY students was compiled by the staff as possible clues to problems and questions that might come up in staff-student discussions and consultations.

Academic Progress Memos. In December, 1962, each student in Groups I, II, and III filled out an Academic Progress Memo which asked him (1) to list each college course he was taking Fall Quarter and the letter grade he expected to receive and (2) to list each college course he was taking Fall Quarter and the letter grade he thought he should receive.

Data Relating to Groups I, II, III, IV, V, and VI

The data described in this section are those available for Groups I, II, III, IV, V, and VI. The data available include: ACT scores, rank in

high school graduating class, sex, student retention, grades and grade point averages, scholastic standing, and General Culture Test scores.

ACT Data. Standard scores on the ACT battery are available for all EFY students and all students in the two norm groups; also available are the predictive data of their grade point average at Southern Illinois University. The information was punched onto IBM cards for analysis. The following scores are available in the form of standard scores for EFY and norm students: mathematics, social studies, English, natural science, and composite.

Rank in High School Graduating Class. A record of the rank in high school graduating class was compiled for students in the EFY groups and the norm groups. These data were converted from "raw score" rank in class to "percentile" rank in class.

Sex. The classification as to sex is available from the student's Southern Illinois University authorization card. These data were coded onto the master data cards.

Student Retention. A record was kept of the number of EFY group and norm group students who remained enrolled at Southern Illinois University. The record, which indicates ACT classification, was maintained on a quarter-by-quarter basis. Information on EFY students no longer enrolled at Southern Illinois University but enrolled at other institutions of higher learning was also obtained through the "Dropout Questionnaire" and the "Follow-up Questionnaire." Information about attendance at schools other than Southern Illinois University is not available for norm groups. A record was made of the number of EFY students who were expected to start the program, the number who actually started the program, the number who completed each term

at Southern Illinois University, and the number who completed terms at other institutions of higher education. Dropout data, the opposite of retention data, for EFY and norm groups are available in regard to Southern Illinois University only. Also available from a questionnaire are data relative to the occupations of dropout students from Groups I, II, III, and IV.

Grades and Grade Point Averages. Grades and grade point averages were recorded for all EFY and all norm students on both a quarter-by-quarter and a cumulative basis. Records of grades of EFY students who left Southern Illinois University to enroll in institutions of higher education elsewhere were also obtained; data on grades are not available for those norms who became students at institutions of higher education other than Southern Illinois University. The "latest" cumulative grade average is available on all EFY and norm groups; the data for norm groups are limited to students enrolled at Southern Illinois University. The grade records include data on credit hours taken, on credit hours passed, and on grade points. Grade data are also available on grades classified either by the General Studies course areas, GSA, GSB, GSC, GSD, or by non-General Studies courses.

Scholastic Standing. Records kept for each EFY and norm group indicate the number of students in each group and classify the students with respect to scholastic standing, either good standing or probation. These records are available for students enrolled at Southern Illinois University only.

General Culture Test. Most EFY and norm students still enrolled at Southern Illinois University in Spring Quarter, 1964, took the sophomore General Culture Test battery, which consists of standardized tests in the

areas of social studies, literature, science, mathematics, and fine arts. In addition to the individual area scores, a composite score is also available for the entire GCT battery.

Appendix B

Latest Cumulative GPA

Latest Cumulative GPA

In a recent critical review of research designs on under-achievement, R. L. Thorndike has suggested that the grade point average at the time a student drops out of school might be used as the grade point average for the year.* This procedure, Thorndike suggests, serves to include all subjects in the data analysis and thereby reduces the loss of any relevant data in GPA studies. This procedure was followed in a special analysis of EFY data to see whether patterns would show up that were not apparent in other analyses conducted.

An analysis of covariance, using means adjusted for initial ACT score differences, was used to analyze the latest cumulative GPA data. When significant F's were reported, t-tests were used to locate group differences.

The latest cumulative GPA data were classified in two ways for the analysis. The first classification involved subjects who completed at least the first quarter. The second classification involved subjects who completed at least three quarters. Both classifications included only those subjects enrolled at Southern Illinois University.

Subjects Completing at Least the First Quarter. The significant t values for the latest cumulative GPA of those subjects who completed the first quarter are presented in Tables 4.B.1, 4.B.2, and 4.B.3, which report the third, fifth, and sixth quarter cumulative GPA's respectively.

The important findings reported in these tables are as follows.

1. For all three quarters reported, the norm groups, Groups V and VI, had significantly higher cumulative GPA's than the experimental

*Robert L. Thorndike, The Concepts of Over- and Underachievement (New York: Columbia University Press, 1963).

TABLE 4.B.1

SIGNIFICANT t-TEST RESULTS AND RELATED DATA ON LATEST CUMULATIVE GPA
 AS OF THE END OF THE THIRD QUARTER FOR SUBJECTS WHO COMPLETED
 AT LEAST ONE QUARTER CLASSIFIED BY GROUPS AND ACT HIGH/LOW SUBGROUPS

Groups Compared		N	Mean*	Standard Deviation	<u>t</u> value	Significance Level
Higher Group	Lower Group					
I	II	66 71	2.77 2.52	.705 .500	2.09	.05
V	I	96 66	3.02 2.77	1.056 .705	2.21	.05
V	II	96 71	3.02 2.52	1.056 .500	4.54	.001
V	III	96 76	3.02 2.62	1.056 .593	3.637	.001
V	IV	96 55	3.02 2.54	1.056 .379	3.969	.001
VI	I	99 66	3.01 2.77	.933 .705	2.210	.05
VI	II	99 71	3.01 2.52	.933 .500	4.556	.001
VI	III	99 76	3.01 2.62	.933 .593	3.643	.001
VI	IV	99 55	3.01 2.54	.933 .379	3.979	.001
V Low	II Low	46 42	2.73 2.37	.845 .706	2.466	.02
V Low	III Low	46 47	2.73 2.36	.845 .840	2.506	.02

continued

TABLE 4.B.1

continued

Groups Compared		N	Mean*	Standard Deviation	t value	Significance Level
Higher Group	Lower Group					
VI Low	II Low	49 42	2.33 2.37	.617 .706	3.163	.01
VI Low	III Low	49 47	2.33 2.33	.617 .840	3.231	.01
VI Low	IV Low	49 34	2.33 2.44	.617 .539	2.536	.02

* The means for subjects classified by groups and ACT Low subgroups are adjusted means resulting from an analysis of covariance adjusting for ACT composite score differences. Refer to Chapter III for discussion of this matter.

TABLE 4.B.2

SIGNIFICANT t-TEST RESULTS AND RELATED DATA ON LATEST CUMULATIVE GPA
 AS OF THE END OF FIFTH QUARTER FOR SUBJECTS AT SIU WHO COMPLETED
 AT LEAST ONE QUARTER CLASSIFIED BY GROUPS AND ACT HIGH/LOW SUBGROUPS

Groups Compared		N	Mean*	Standard Deviation	<u>t</u> value	Significance Level
Higher Group	Lower Group					
V	I	96 66	3.01 2.71	1.034 .630	2.75	.01
V	II	96 71	3.01 2.54	1.034 .504	4.42	.001
V	III	96 76	3.01 2.61	1.034 .546	3.77	.001
V	IV	96 55	3.01 2.51	1.034 .416	4.23	.001
VI	I	99 66	3.03 2.71	.923 .630	2.96	.01
VI	II	99 71	3.03 2.54	.923 .504	4.64	.001
VI	III	99 76	3.03 2.61	.923 .546	3.99	.001
VI	IV	99 55	3.03 2.51	.923 .416	4.43	.001
V Low	II Low	46 42	2.72 2.36	.802 .666	2.55	.02
V Low	III Low	46 47	2.72 2.41	.802 .803	2.32	.05
V Low	IV Low	46 34	2.72 2.40	.802 .521	2.20	.05

continued

TABLE 4.B.2

continued

Groups Compared		N	Mean*	Standard Deviation	t value	Significance Level
Higher Group	Lower Group					
VI Low		49	2.85	.637		
	I Low	44	2.50	.850	2.54	.02
VI Low		49	2.85	.637		
	II Low	42	2.36	.666	3.47	.001
VI Low		49	2.85	.637		
	III Low	47	2.41	.803	3.26	.01
VI Low		49	2.85	.637		
	IV Low	34	2.40	.521	3.06	.01

* The means for subjects classified by groups and ACT Low subgroups are adjusted means resulting from an analysis of covariance adjusting for ACT composite score differences. Refer to Chapter III for discussion of this matter.

TABLE 4.B.3

SIGNIFICANT t-TEST RESULTS AND RELATED DATA ON LATEST CUMULATIVE GPA
 AS OF THE END OF THE SIXTH QUARTER FOR SUBJECTS WHO COMPLETED
 AT LEAST ONE QUARTER CLASSIFIED BY GROUPS AND ACT HIGH/LOW SUBGROUPS

Groups Compared		N	Mean*	Standard Deviation	<u>t</u> value	Significance Level
Higher Group	Lower Group					
V	I	96 66	3.02 2.70	1.038 .623	2.92	.01
V	II	96 71	3.02 2.54	1.038 .495	4.47	.001
V	III	96 76	3.02 2.63	1.038 .556	3.76	.001
V	IV	96 55	3.02 2.51	1.038 .420	4.41	.001
VI	I	99 66	3.02 2.70	.930 .623	2.97	.01
VI	II	99 71	3.02 2.54	.930 .495	4.53	.001
VI	III	99 76	3.02 2.63	.930 .556	3.82	.001
VI	IV	99 55	3.02 2.51	.930 .420	4.47	.001
V Low	II Low	46 42	2.74 2.40	.319 .636	2.40	.02
V Low	III Low	46 47	2.74 2.40	.319 .301	2.47	.02
V Low	IV Low	46 34	2.74 2.40	.319 .526	2.31	.05

continued

TABLE 4.B.3

continued

Groups Compared		N	Mean*	Standard Deviation	t value	Significance Level
Higher Group	Lower Group					
VI Low		49	2.83	.633		
	I Low	44	2.49	.342	2.51	.02
VI Low		49	2.83	.633		
	II Low	42	2.40	.686	3.11	.01
VI Low		49	2.83	.633		
	III Low	47	2.40	.801	3.20	.01
VI Low		49	2.83	.633		
	IV Low	34	2.40	.526	2.97	.01

* The means for subjects classified by groups and ACT Low subgroups are adjusted means resulting from an analysis of covariance adjusting for ACT composite score differences. Refer to Chapter III for discussion of this matter.

and control groups.

2. There were no significant differences among the experimental groups (with one exception) and/or control groups or between the two norm groups. The one exception to this finding is that Group I was significantly higher than Group II for third quarter.
3. The High and Low subgroups for the norm groups were generally significantly higher than the respective High and Low subgroups for the experimental and control groups.

Subjects Completing at Least Three Quarters. Latest cumulative GPA data for subjects who completed at least three quarters are reported by EFY groups and ACT Low subgroups in Table 4.B.4. Data for the High subgroups were not available because the analysis of covariance yielded non-significant results, and therefore, t-tests output providing the numbers of subjects, means, and standard deviations were not computed.

The significant t values for the latest cumulative GPA of subjects who completed at least three quarters are reported in Table 4.B.5. The important findings reported in this table are as follows.

1. Groups I, V, and VI had significantly higher mean GPA's than Groups II and III.
2. Groups I, V, and VI did not differ significantly from each other, nor did Groups II and III.
3. There were no significant differences among the High subgroups.
4. The Low subgroups in Groups I, V, and VI generally had significantly higher GPA's than the Low subgroups in Groups II and III.

The latest cumulative GPA results reported here conflict somewhat with the GPA results reported in Chapter IV. This difference is probably a characteristic of the latest cumulative GPA technique. The sample of subjects

TABLE 4.B.4

LATEST CUMULATIVE GPA DATA FOR EFY SUBJECTS AT SIU WHO COMPLETED
AT LEAST THREE QUARTERS CLASSIFIED BY GROUPS
AND ACT HIGH/LOW SUBGROUPS

Group	N	Mean	St. Dev.
Subjects Classified by Groups			
I	52	2.99	.280
II	62	2.67	.224
III	62	2.76	.257
IV	24	2.86	.299
V	78	3.13	.955
VI	83	3.18	.841
ACT High Subjects Classified by Groups			
I			
II			
III	Not Available*		
IV	F = 1.914		
V			
VI			
ACT Low Subjects Classified by Groups			
I	34	2.80	.444
II	35	2.59	.466
III	38	2.54	.621
IV	13	2.70	.274
V	36	2.81	.804
VI	38	3.01	.467

* Data for the High subgroups were not available because the analysis of covariance yielded non-significant results, and therefore, t-tests output providing the numbers of subjects, means, and standard deviations were not computed.

TABLE 4.B.5

SIGNIFICANT t-TEST RESULTS AND RELATED DATA ON LATEST CUMULATIVE GPA
 FOR EFY SUBJECTS AT SIU WHO COMPLETED AT LEAST THREE QUARTERS
 COMPARED BY GROUPS AND ACT HIGH/LOW SUBGROUPS

Groups Compared		N	Mean	Standard Deviation	<u>t</u> value	Significance Level
Higher Group	Lower Group					
I	II	52 62	2.99 2.67	.280 .224	3.03	.01
I	III	52 62	2.99 2.76	.230 .257	2.23	.05
V	II	78 62	3.13 2.67	.955 .224	4.78	.001
V	III	78 62	3.13 2.76	.955 .257	3.90	.001
VI	II	33 62	3.18 2.67	.341 .224	5.40	.001
VI	III	83 62	3.13 2.76	.841 .257	4.50	.001
VI	IV	33 24	3.18 2.86	.341 .299	2.44	.02
I Low	III Low	34 38	2.80 2.54	.444 .621	2.02	.05
V Low	III Low	36 33	2.81 2.54	.804 .621	2.13	.05
VI Low	II Low	33 35	3.01 2.59	.467 .466	3.33	.001
VI Low	III Low	38 38	3.01 2.54	.467 .621	3.30	.001

for the latest cumulative GPA analysis included those persons who dropped out of college as well as those who continued. Thorndike argues that the latest statement of a student's GPA, whether he is or is not a dropout, will increase the number of subjects included in the study and will increase the validity of the measurement of the impact of a treatment on these subjects. But Thorndike fails to point out that an analysis including the latest cumulative GPA for dropouts may hide or distort differences in a study of GPA over several years. For example, the latest cumulative GPA, which includes dropouts, will be relatively insensitive to extreme GPA changes for subjects remaining in school. Furthermore, justification for including, in a sample for latest cumulative GPA, dropouts who failed to complete a prescribed treatment is not entirely convincing. In summary, it would appear that there are many shortcomings in the criterion of latest cumulative GPA proposed by Thorndike, but additional research is needed to examine the usefulness of this criterion.

Appendix C

Term Grade Point Average Data

Term Grade Point Average Data

Grade point average (GPA) data for EFY subjects on a term-by-term basis are in this appendix. The word "term" is used here to distinguish between cumulative GPA data and GPA data for an independent quarter. Tables 4.C.1 and 4.C.2 contain the numbers of subjects, means, and standard deviations for term GPA's for the first through the sixth quarter.

The third, fifth, and sixth term mean GPA's were compared to determine whether there were statistically significant differences among groups or among subgroups.

Third Term GPA

An analysis of covariance test was run on the third quarter data in order to adjust the GPA means to compensate for ACT score differences of subjects in school third quarter. When significant F's resulted, t-tests were computed to determine which specific group comparisons were significantly different.

Third term GPA data relative to group and subgroup comparisons for which mean GPA's were significantly different are reported in Table 4.C.3. The important findings are as follows.

1. The norm groups, Groups V and VI, generally had higher GPA's than Group II, the only experimental group included in the analysis, and the control groups, Groups III and IV.
2. There were no significant differences among experimental and/or control groups or between the norm groups.
3. The norm group High's generally had significantly higher GPA's than the experimental and control group High's.
4. There were no significant differences among the Low subgroups.

TERM GPA DATA FOR THE FIRST, SECOND, AND THIRD QUARTERS FOR EHY SUBJECTS WHO COMPLETED

* The subjects in Group I received their grades for the first three quarters in one block, at the end of their first year; therefore, term GPA data are not available for Group I for the first, second, and third quarters.

* The subjects in Group I received their grades for the first three quarters in one block, at the end of their first year; therefore, term GPA data are not available for Group I for the first, second, and third quarters.

TABLE 4.C.2

TERM GPA DATA FOR THE FOURTH, FIFTH, AND SIXTH QUARTERS FOR EFY SUBJECTS WHO COMPLETED EACH OF THE FOURTH, FIFTH, AND SIXTH QUARTERS AT SIU CLASSIFIED BY GROUPS AND ACT HIGH/LOW SUBGROUPS

Group	Completed Fourth Quarter		Completed Fifth Quarter		Completed Sixth Quarter	
	N	Mean	SD	N	Mean	SD
Subjects Classified by Groups						
I	46	2.66	.719	38	2.03	.659
II	47	2.53	.575	36	2.71	.715
III	42	2.71	.757	34	2.77	.675
IV	19	2.60	.757	17	2.62	.802
V	54	3.14	.812	49	3.22	.706
VI	66	3.26	.742	65	3.28	.685
Subjects Classified by Groups						
I	46	2.66	.719	38	2.03	.659
II	47	2.53	.575	36	2.71	.715
III	42	2.71	.757	34	2.77	.675
IV	19	2.60	.757	17	2.62	.802
V	54	3.14	.812	49	3.22	.706
VI	66	3.26	.742	65	3.28	.685
ACT High Subjects Classified by Groups						
I	16	2.99	.587	16	2.98	.539
II	23	2.58	.597	19	2.84	.753
III	18	2.71	.685	16	2.51	.751
IV	7	2.91	.973	7	3.10	.405
V	34	3.33	.835	32	3.47	.660
VI	36	3.48	.661	36	3.38	.686
ACT Low Subjects Classified by Groups						
I	30	2.49	.730	22	2.72	.727
II	24	2.48	.563	17	2.57	.664
III	24	2.70	.821	18	3.00	.517
IV	12	2.42	.572	10	2.29	.858
V	20	2.83	.681	17	2.75	.544
VI	30	3.00	.760	29	3.14	.672

* The data for Group IV Low's (19 or below on composite ACT score) were not complete for the sixth quarter and therefore are not reported in these data.

TABLE 4.C.3

SIGNIFICANT t-TEST RESULTS AND RELATED DATA ON
 THIRD QUARTER TERM GPA FOR EFY SUBJECTS WHO COMPLETED
 AT LEAST THREE QUARTERS COMPARED BY GROUPS** AND ACT HIGH/LOW SUBGROUPS

Groups Compared		N	Mean*	Standard Deviation	<u>t</u> value	Significance Level
Higher Group	Lower Group					
V	II	78 62	3.00 2.65	1.086 .427	2.63	.01
V	III	73 62	3.00 2.62	1.086 .650	2.93	.01
VI	II	32 62	3.13 2.65	.906 .427	3.63	.001
VI	III	32 62	3.13 2.62	.906 .650	3.93	.001
VI	IV	82 24	3.13 2.74	.906 .527	2.13	.05
V High	II High	42 27	3.35 2.73	.883 .756	3.03	.01
V High	III High	42 24	3.35 2.90	.883 .728	2.13	.05
VI High	II High	45 27	3.31 2.73	.736 .756	2.85	.01

* The means for subjects classified by groups and ACT Low subgroups are adjusted means resulting from an analysis of covariance adjusting for ACT composite score differences. Refer to Chapter III for a discussion of this matter.

** The subjects in Group I received their grades for the first three quarters in one block at the end of their first year; therefore, term GPA data are not available for Group I for the first, second, and third quarters.

Fifth Term GPA

An analysis of variance test was run on the fifth term data. When significant F's were produced, t-tests were run to determine which specific group comparisons were significantly different.

Fifth term GPA data relative to group and subgroup comparisons for which mean GPA's were significantly different are reported in Table 4.C.4. The important findings are as follows.

1. The norm groups had significantly higher GPA's than the experimental and control groups.
2. There were no significant differences among experimental and/or control groups or between the norm groups.
3. The norm group High's generally had higher GPA's than the experimental and control group High's.
4. Group VI Low's had higher GPA's than both experimental Low subgroups and one control Low subgroup.

Sixth Term GPA

An analysis of variance test was run on the sixth term data. When significant F's were produced, t-tests were run to determine which specific group comparisons were significantly different.

Sixth term GPA data relative to group and subgroup comparisons for which mean GPA's were significantly different are reported in Table 4.C.5. The important findings are as follows.

1. In general, the norm groups had higher GPA's than the experimental and control groups.
2. There were no significant differences among the experimental and/or control groups or between the norm groups.

TABLE 4.C.4

SIGNIFICANT t-TEST RESULTS AND RELATED DATA ON FIFTH QUARTER
 TERM GPA FOR SUBJECTS WHO COMPLETED AT LEAST FIVE
 QUARTERS AT SIU COMPARED BY GROUPS AND ACT HIGH/LOW SUBGROUPS

Groups Compared		N	Mean	Standard Deviation	<u>t</u> value	Significance Level
Higher Group	Lower Group					
V	I	49 38	3.22 2.83	.706 .659	2.41	.02
V	II	49 36	3.22 2.71	.706 .715	3.12	.01
V	III	49 34	3.22 2.77	.706 .675	2.72	.01
V	IV	49 17	3.22 2.62	.706 .802	2.34	.01
VI	I	65 38	3.23 2.83	.685 .659	2.90	.01
VI	II	65 36	3.23 2.71	.685 .715	3.64	.001
VI	III	65 34	3.28 2.77	.685 .675	3.21	.01
VI	IV	65 17	3.23 2.62	.685 .802	3.21	.01
V High	I High	32 16	3.47 2.98	.659 .539	2.09	.05
V High	II High	32 19	3.47 2.84	.659 .753	2.36	.01
V High	III High	32 16	3.47 2.51	.659 .751	4.11	.001

continued

TABLE 4.C.4

continued

Groups Compared		N	Mean	Standard Deviation	<u>t</u> value	Significance Level
Higher Group	Lower Group					
VI High	II High	36 19	3.38 2.34	.686 .753	2.52	.02
VI High	III High	36 16	3.38 2.51	.686 .751	3.81	.001
III Low	IV Low	18 10	3.00 2.29	.517 .858	2.46	.02
VI Low	I Low	29 22	3.14 2.73	.672 .727	2.04	.05
VI Low	II Low	29 17	3.14 2.57	.672 .664	2.60	.02
VI Low	IV Low	29 10	3.14 2.29	.672 .853	3.20	.01

TABLE 4.C.5

SIGNIFICANT t-TEST RESULTS AND RELATED DATA
ON SIXTH QUARTER TERM GPA FOR SUBJECTS WHO COMPLETED
SIX QUARTERS AT SIU COMPARED BY GROUPS*AND ACT HIGH/LOW SUBGROUPS

Groups* Compared		N	Mean	Standard Deviation	<u>t</u> value	Significance Level
Higher Group	Lower Group					
V	I	44 30	3.40 2.73	.756 .805	3.31	.001
V	II	44 28	3.40 2.76	.756 .844	3.12	.01
V	III	44 29	3.40 2.91	.756 .822	2.39	.02
VI	I	59 30	3.21 2.73	.824 .805	2.52	.02
VI	II	59 23	3.21 2.76	.824 .844	2.34	.02
V High	I High	29 12	3.51 2.86	.737 .871	2.17	.05
V High	II High	29 15	3.51 2.70	.737 .967	2.89	.01
V High	IV High	29 7	3.51 2.75	.737 .295	2.05	.05
VI High	I High	34 12	3.49 2.86	.746 .871	2.15	.05
VI High	II High	34 15	3.49 2.70	.746 .967	2.89	.01
VI High	IV High	34 7	3.49 2.75	.746 .295	2.05	.05

* The data for Group IV Lows (19 or below on composite ACT score) were not complete for the sixth quarter and therefore are not reported in these data.

3. The High subgroups for the norm groups were generally higher than the High subgroups for the experimental and control groups.
4. There were no significant differences among the Low subgroups.